

HUMANS OF FSIB

VOL. 3

HUMANS ^{OF} FSB

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Predgovor trećem izdanju

Vratili ste me u moje studentske dane kroz ta dva sata intervjua i na tome vam hvala. Toliko sam stvari ispričao da se više ne sjećam jesam li rekao najbitniju stvar, a to je nešto s čime se još par kolega na poslu složilo sa mnom... **HUMANS OF FSB je nešto što je ovom faksu bilo potrebno.** (...) prve tri godine su surove i nagledate se svega i svačega, od izgubljenih živaca do propalih snova te od kada je došla Bologna, izgubljenog novca. Super je što su tekstovi utopijske naravi, daju cijelom faksu potrebnu dozu ljudskosti. Samo neka se moment i dalje održi. Veselim se potpisanoj verziji, bit će mi to još jedna lijepa uspomena na Fakultet. Planiram je staviti kraj diplomskog rada.

Ovako je Hrvoje Topličanec, alumnus Fakulteta strojarstva i brodogradnje (FSB), opisao projekt HUMANS OF FSB. Ovdje je istaknut kao predstavnik mnogih koji su u projektu prepoznali nešto iskreno i motivirajuće. Knjiga koju držite u rukama obuhvaća 30 priča ljudi s FSB-a, nastalih u neformalnom ambijentu. Sve su prevedene na engleski jezik kako bi bile dostupne međunarodnoj publici, a objavljuju se online da se čuju i dalje od hodnika Fakulteta. Čitanjem ove knjige steći ćete uvid u bogatstvo osobnosti ljudi koji čine FSB i inženjersku struku današnjice.

Foreword to the third edition

*You took me back to my student days during our two hour interview, and I thank you for that. I talked so much that I can't remember if I said the most important thing, and that is something on which a couple of work colleagues agreed with me... **HUMANS OF FSB is something this faculty needed.** (...) the first three years at the faculty are rough and you'll see a lot of things, from nervous breakdowns to failed dreams and, ever since Bologna Process was introduced, lost money. It is great that these stories are utopian, they give the whole faculty a needed human touch. Keep that momentum going. I look forward to the signed version, it will be another nice memory of the faculty. I plan on displaying it next to my graduate thesis.*

This is how Hrvoje Topličanec, an alumnus of the Faculty of Mechanical Engineering and Naval Architecture (locally abbreviated as FSB), described the project HUMANS OF FSB. Hrvoje is a representative of many people who recognized something genuine and motivating in this project. The book you're holding in your hands contains 30 stories of people from FSB, created in an informal setting. All stories are translated into English to be accessible to international audiences and published online to be heard outside the Faculty hallways. By reading this book you will gain insight into the richness of personalities of people who make FSB and the engineering profession of the present times.



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Tajana Puljić, studentica

Kad me ljudi upitaju odakle sam, pravi odgovor je – iz CADlaba, jer bi se moglo reći da živim tu na faksu. Najčešće dolazim rano ujutro kad imam prijevoz do Zagreba. Mislila sam da kao konstruktor neću morati raditi s ljudima, ali izgleda da sam se poprilično prevarila. Lijepi su mi trenuci kad sam sama i radim na nečemu u miru, jer ne zahtjeva dogovor, no s druge strane, teško je raditi sve sam i zato mi je timski rad važan. S motiviranim timom je stvarno super raditi. Radili smo nedavno električni skuter za EGPR projekt u Londonu. Zadnjih mjesec dana smo kolege i ja dosta vremena proveli radeći na tome. Znali smo biti u CADlabu svaki dan od 8 ujutro do 9 navečer da bi sve stigli napraviti, od tehničke dokumentacije do troškovnika. Mjesec dana kasnije, u Londonu na Gradskom sveučilištu smo prezentirali projekt i ispalo je super. Unatoč brojnim poteškoćama, uspjeli smo sve napraviti. Bilo je frustrirajućih trenutaka kad smo mislili sve to ostaviti, ali nemojte krivo shvatiti, bez obzira što se umorim ja to zapravo ne smatram poslom i drago mi je kad sve svoje vrijeme uložim u to što volim. Na kraju dobijem predivno iskustvo. Kad dobijem priliku naučiti nešto, uvijek je iskoristim.

Jedna stvar koja stoji je da strojari stvarno imaju najčudnije stvari u torbama. Jednom mi je pukla kopča i svatko je izvadio nešto, jedan kliješta, drugi žicu i začas su to popravili. Dan danas je imam doma. Vjerojatno zato od njih i dobivam najčudnije, ali meni najdraže poklone, kao što su ležajevi i vijci. Imam jedan vijak koji mi je dao prijatelj u Londonu, a kako nisam ponijela niti jedan drugi suvenir, planiram ga staviti na ključ kao privjesak.

Tajana Puljić, student

When people ask me where I live, the answer is – in CADlab, because I pretty much live here at the Faculty. Usually, I arrive early in the morning when I catch a ride to Zagreb. I thought that, as a designer, I wouldn't have to work with people, but it seems that I was wrong. I enjoy working alone since it doesn't require discussion, but on the other hand it's quite hard to do everything by yourself and that's why I find teamwork important. It's really great to work on something with a motivated team. The most recent project was to construct an electric scooter for EGPR project in London. My colleagues and I spent long hours working on that. Sometimes we were in CADlab every day from 8 a.m. till 9 p.m., trying to finish everything, from technical documentation, financial projections, etc. We presented our project at the City University of London a month later and everything went great. Despite all the difficulties, we managed to finish our work. There were some frustrating moments when we wanted to give up, but don't get me wrong, no matter how physically tired you might get, I really don't consider it hard work and I enjoy spending time on something I love doing. At the end, I get a wonderful experience. Whenever I get an opportunity to learn something, I always take it.

It is fair to say that mechanical engineers always have weirdest stuff in their bags. I once broke my hair clip and everyone pulled out something, one pliers, another wire, and then they repaired it in no time. I still have it at home. Probably that's the reason why I get weirdest but favorite presents from them, like screws and bearings. I got a screw from a friend in London, and since I didn't bring any other souvenir, I plan to put it on my keys as a pendant.



Zdravko Terze, profesor

Moj najuži znanstveni interes je dinamika sustava čvrstih i krutih tijela. To su sustavi koji se protežu od reda veličine nano do makrosustava poput zrakoplova i svemirskih objekata. Kao član Odbora za praćenje i nadzor svemira Europske komisije, između ostalog, sudjelujem u koordinaciji praćenja zaostataka svemirskih operacija koji su danas velik problem pri konstrukciji satelita i planiranju misija. Prvi susret s Europskom svemirskom agencijom u Hrvatskoj organizirao sam ovdje na Fakultetu, a ovdje smo organizirali i radionice za znanstvenu zajednicu. Tom prilikom neki su me mediji upitali: „Što će nama svemir?“ Pa ljudi moji, ovo je svemir, u njemu živimo! Naše zemaljske probleme rješavam iz svemira – možemo predvidjeti poplave, potrese, a da ne govorimo koliko primjena ima navigacijski sustav. Značajan udio europske ekonomije veže se upravo na svemirske tehnologije.

Imao sam ideje za algoritme koji će bolje opisivati fenomene dinamike mehaničkih sustava na zakrivljenim prostorima koje sam smatrao prilično interesantnima, pa i u svjetskim okvirima. Ustrajao sam u njima, naporno radio da bih ih ostvario te na kraju, nadam se, u tome i uspio. U devedesetim godinama, za vrijeme mog doktorata, e-mail mi je omogućio komunikaciju sa znanstvenicima iz Europe, najviše Bruxellesa i Stuttgarta. Tako sam počeo pronalaziti sugovornike u cijelom svijetu, jer vi kao inženjeri ste dio globalne zajednice. Ili ste svjetski ili... niste. Kada se bavite užim dijelom znanosti, istraživanja nose pojedinci, stručnjaci diljem svijeta, koji su vaši prijatelji. Odjednom se sve svede na gotovo obiteljsku razinu. Zato uvijek kažem studentima da se izvrsnom znanošću možete baviti i u Zagrebu. Koliko god često putujem, uz suradnje s agencijama i sveučilištima, Zagreb je za mene generator tema iz kojih se rađaju projekti. Studenti kroz fakultet dobivaju osnovna znanja kako bi se mogli sami suočiti s ljepotama koje ih čekaju. Do devedesetih godina prošlog stoljeća nismo razumjeli način na koji lete insekti. Po tada poznatim zakonima aerodinamike bumbar ne bi smio letjeti! On generira vrlo složeni sustav vrtloga koji je daleko napredniji od ljudski napravljenih, umjetnih. Po struci smo pozvani otkrivati tajne prirode, koje su nevjerojatne. Otkrivati, a kasnije koristiti za dizajn svojih objekata... To je stvarno predivno. Velike rotacije za mene su magija.

Zdravko Terze, professor

My narrowest scientific interest is dynamics of multibody systems. Those are systems which stretch from nano to macro systems, like airplanes and space objects. As a member of Space Surveillance and Tracking Committee of European Commission, I take part in the coordination of tracking space debris, which, today, is a considerable problem during satellite design and mission planning. I organized the first meeting with the European Space Agency officers in Croatia at the Faculty, as well as workshops for research community. On that occasion some media asked me: “Why do we need space?” My dear people, this is space, we live in it! All our Earth problems are solved from space – we can predict floods, earthquakes, not to mention the use of navigational system. A great amount of European economy is directly tied to space technologies.

I’ve had ideas for algorithms which could better describe the phenomenon of dynamics of mechanical systems in curved space settings, which I thought were pretty interesting, even worldwide. I thrived in studying them, worked hard to accomplish it and, at the end, hopefully succeeded. In the 90s, during my doctoral study, email enabled me to communicate with scientists from Europe, mostly from Brussels and Stuttgart. Soon, I found interlocutors in the whole world, because you, as engineers, are part of the global community. You know, you are either the hammer or the anvil. When you are engaged in a certain part of science, researches are carried out by individuals, experts across the world, who are basically your friends. Suddenly everything goes down to a family level. That’s why I always tell my students they can do excellent scientific work in Zagreb, too. As much as I travel and cooperate with agencies and universities, Zagreb, for me, is the generator of topics from which projects arise. Students gain elementary knowledge at the Faculty so they can confront beautiful things that are waiting for them. Until 90s we didn’t understand how insects fly. According to known laws of aerodynamics Bumblebee couldn’t fly! It generates a very complex system of vortexes that are far more advanced than our human made, artificial ones. By our vocation, we are called upon to discover the secrets of nature, which are splendid. Discover, and then use it for the design of our objects... That’s really magnificent. Large rotations are magic for me.



Vera Rede, izvanredna profesorica

Rođena sam u Grebnicama, selu u Bosanskoj Posavini, nizvodno od ušća rijeke Bosne u Savu. Kad sam krenula u školu tamo nije bilo ni struje. Rijetko koja curica je upisivala srednju školu, a iz moje generacije ima i onih koje su išle samo do četvrtog razreda osnovne. Neke nisu imale priliku... Kako su me jedva pustili u srednju školu, mislila sam da je bolje upisati tehničku školu nego gimnaziju i ići korak po korak, pa onda daj Bože da dođe i faks. Iako su mi falili neki predmeti iz opće kulture, pogotovo likovni jer sam jako voljela crtati, tehničko crtanje je bila dobra kompenzacija.

Znala sam jednog dečka iz sela koji je bio na strojarstvu, a kad sam ga jedanput srela preko ljeta pitala sam kako mu je. Rekao je da je strojarstvo super, da je Zagreb krasan... Zanimljivo je da, kad sam se ja upisala 1979., na prvoj godini bilo šest djevojaka i nije bilo ženskih WC-a. Spremačice su u južnoj zgradi između A i B dvorane imale spremište za metle i svoj WC, a tamo smo i mi išle. Nije mi žao što sam došla na strojarstvo, i nije mi bilo ni strašno teško jer sam imala dobru podlogu iz srednje škole.

Mislim da se ljudi dijele na potrošače i proizvođače. Ja sam po prirodi proizvođač – kad vidim nešto što mi se sviđa, ne poželim to kupiti, nego napraviti nešto slično. Mislim da je među nama strojarima više takvih ljudi, koji su baš veseli kad nešto naprave, kad nešto stvore svojim rukama ili glavom.

Imam vrt, a u supermarketima kupujem samo kad moram. Odlučila sam da to bude bio-vrt. Bez umjetnih gnojiva i zaštite, mislim si, kad već imam malo prostora mogu ga i okopati ako treba. Aktivna sam u dvije udruge koje se bave očuvanjem hrvatske kulturne baštine i tradicije – „Prsten“ i „Kragulj“. U udrugama povremeno vodim radionice tkanja na tkalačkom stanu. Meni je kao strojaru, tkanje jako zanimljivo jer se radi na mehaničkoj napravi koja daje lijepi proizvod. Drago mi je vidjeti ozarenost i iznenađenje polaznika kad na kraju procesa izvuku gotovi šal od vune, lana, pamuka, svile. Dobar je osjećaj kad nešto izradite vlastitim rukama. Budite proizvođači!

Vera Rede, associate professor

I was born in Grebnica, a village in Bosanska Posavina, downstream from the mouth of rivers Bosna and Sava. When I went to school there was no electricity. Girls would rarely enroll in high school after the elementary school, and there were also those who only went to the fourth grade of elementary school from my generation. Some didn't have a chance. Since I was barely allowed to go to high school, I thought it was better to enroll in a technical school and go step by step, and with God's help reach faculty. Although I missed some subjects from general culture, especially art because I really liked to draw, technical drawing was a good compensation.

I knew a boy from the village who studied mechanical engineering, so when I met him one summer I asked how it was. He said that mechanical engineering was superb, that Zagreb was beautiful... Interestingly, when I enrolled in 1979, there were only six girls at the Faculty and no toilets for women. In the southern building between halls A and B cleaning ladies had a room for brooms and their toilet, which we also used. I'm not sorry I chose engineering, and it wasn't terribly difficult for me since I had an excellent base from high school.

I think people could be split into two categories – consumers and creators. By nature, I am a creator – when I see something I like, I don't want to buy it but to make it. I think that among mechanical engineers there are more people who are very happy when they create something with their hands or head.

I have a garden and I go to super markets only when I have to. I decided it to be a bio-garden without artificial fertilizers and protection, and since I have so little space I can dig it myself if needed. I'm a member of two associations which deal with the preservation of Croatian cultural heritage – „Prsten“ and „Kragulj“. There, I run weaving workshops where scarves are formed by interlacing long threads. I'm interested in it from a mechanical engineering perspective particularly because it is a mechanical device that gives out a beautiful finished product. I live for the moment when participants for the first time see finished scarf made of wool, linen, cotton or silk. To see the excitement... I really love working with my hands. Be a creator!



Hrvoje Topličanec, vanjski suradnik

Jedan od boljih načina da se dokažete je da napišete dobar diplomski rad. Moj je bio kod profesora Žeželja. Kad sam ga radio, radio sam s velikom ljubavlju i htio sam da mi to bude uspomena na Fakultet. Tako je ispalo da je na tom diplomskom roku samo jedan kolega imao deblji diplomski rad od mene! Na temelju tog diplomskog rada dobio sam posao, na kojem sam danas, u razvojnom timu Končara D&ST-a, i profesor Žeželj me pozvao da dođem raditi na faks kao vanjski suradnik i asistent. Nema previše tema, često je vi morate sami sebi izmisliti. Sjećam se kako sam došao kod profesora Žeželja i rekao: „Profesore, dajte da smislimo neku temu.“ On je sjedio na dotrajalom uredskom stolcu: „Pa dajte kolega neki uređaj za ispitivanje uredskih stolica.“ I to je na kraju stvarno bila moja tema. Najdraži dio studija mi je taj diplomski studij, te zadnje dvije godine na kojima sam i radio uz faks. Sve je bilo gušt. Malo vas je, profesori vas već znaju po imenu, i imate više slobodnog vremena. Prošli ste ono najgore – prve tri godine. Kad sam pisao završni rad tri puta tjedno sam išao na bazen... Riješite se prve tri godine čim prije! Isto tako, ako imate priliku za studentsku ekskurziju koju Fakultet nudi – iskoristite ju.

U familiji sam četvrta generacija koja je završila fakultet pa se od mene očekivao određeni put – gimnazija i faks, druga ograničenja od staraca nisam imao. Kad si mlad, puno je potencijalnih uzora i „rock zvijezda“. Ali ja ne mogu reći da mi je itko idol. Slažem se s onime što je Senna rekao: „Nemam idola. Cijenim rad, trud i kompetenciju.“ Jedino mi je moj djed iznimka, jer je bio iznimno cijenjen – i ovdje i u inozemstvu. Na pogreb mu je došlo oko tristo ljudi. Djed je iz familije četvero braće – troje inženjera i jednog slikara. Bio je inženjer rudarstva u firmi Geotehnika, putovao po cijelom svijetu i bušio bunare. Em cijenjen, em sposoban, em je volio to što je radio. Zvali su ga kao počasnog profesora da drži predavanja na Rudarskom fakultetu. Nije išao radi bake, da ne ostane sama doma. No, bilo mu je uvijek žao i to je jedan od razloga zašto držim vježbe na faksu. Kad nisam znao riješiti nešto iz fizike, uvijek sam išao k njemu. Žao mi je što ga više nije bilo sa mnom kad sam položio fluide. Taj dan mi je krenulo na faksu, nakon što sam se na drugoj godini pitao je li to faks za mene ili nije – mogu li izdržati trud koji treba uložiti. I zato sam mu zahvalan na svemu. Iz tog razloga na prvoj stranici diplomskog rada stoji posveta: „Mojem djedu“.

Hrvoje Topličanec, external associate

One of the best ways to prove your merit is to write a good Master's thesis. My was with professor Žeželj. When I was doing it, I did it with great love and wanted it to be my memory of the Faculty. It turned out that only one colleague had a thicker graduate thesis than me! Based on this thesis I got a job I still have in Končar D&ST's development team, and professor Žeželj invited me at the Faculty to work as an external associate and assistant. There aren't many topics to choose from, you have to come up with your own. I came to professor Žeželj and said, "Professor, let us think of a topic." He was sitting on a wrecked office chair, "Well, one would find use of an office chair testing device." And that indeed became my topic. The best part of my studies was the graduate programme, and during the last two years of it I also worked alongside with my study. Everything was a breeze. There are only few of you left so professors know you by name, and you have more free time. You've been through the worst, the first three years. While I was writing my final thesis I went to the pool three times a week... Get rid of the first three years as soon as possible! If you get the chance, don't miss going to student excursions.

I'm the fourth generation of college graduates in the family so I was expected to go down a certain path – finish grammar school and then faculty, there weren't any other constraints besides these. When you are young, there are lots of potential idols and "rock stars". But I have none. I agree with what Senna said: "I have no idols. I admire work, dedication and competence." There is only one exception to that – my grandfather. For he was extremely appreciated – both here and abroad. There were around three hundred people on his funeral. Grandfather comes from a family of four brothers – three engineers and one painter. He was a mining engineer, traveled all over the world, and drilled wells. He ended up at Geotehnika company as a director. Admired, capable, loved what he was doing. He was invited to give lectures as professor emeritus at the mining faculty. He didn't go at the end because he didn't want to leave grandmother alone. But he was always sorry for it, and that's one of the reasons why I hold workshops. When I didn't know how to solve a problem in physics, I always asked him. I'm sorry he wasn't with me when I passed Fluid Mechanics. That was the day when things finally took off with the faculty, after the second year when I questioned myself whether it was for me or not. I'm grateful to him for everything. Written on the first page of the Master's thesis stands a dedication: "To my grandpa."



Martina Sereni i Cecilia Serra, Erasmus studentice

Točno se sjećam trenutka kad se to dogodilo. Prošle godine smo bile u knjižnici i pripremale se za ispite. Onda smo otišle na ručak i vratile se opet u knjižnicu. Martina je ručala doma pa se nismo vidjele dva sata. Pogledala me i rekla: „Ceci, imam ideju.“ Pitala sam ju: „Koju?“, na što me pitala: „Želiš li sa mnom ići na Erasmus?“ Odgovorim joj: „Da? OK! Možemo mi to!“ Odlučile smo se za studije na engleskom, u Danskoj, Parizu i Hrvatskoj. Kad smo saznale finalnu odluku bilo je tako lijepo.

Studiramo na istom sveučilištu i živimo u istom gradu, Modeni – blizu Bologne, na sjeveru Italije. Italija nije kao iz filma Kum. Ali ipak, može se reći da jug ima drukčiji pogled na život od sjevera. Bile smo tamo – u Rimu, Pompejima, Siciliji... Ljudi su super ljubazni, baš kao u Zagrebu. Jedne noći smo iz centra krenule prema studentskom domu i nismo bile sigurne kojim tramvajem ići, to je bila jedna od naših prvih noći u Zagrebu. Pitala smo vozača, ali nije znao engleski. Pokušao je on nešto i objasniti, ali nismo ga razumjele pa smo počeli komunicirati rukama. Kasnije je zaustavio tramvaj na mjestu koje inače nije njegova stanica – i to samo za nas. Pokazao nam je put do doma i mahnuo. Bile smo šokirane. Nedeljko Štefanić je naš profesor proizvodnog menadžmenta. Rekao je: „Da, vi ste nama posebni studenti, vi ste naši gosti.“ Pitao je ostatak studenata žele li predavanja na engleskom ili hrvatskom, i svi su odabrali engleski tako da bi i mi mogle razumjeti. To je bilo jako lijepo od njih.

Mislim da je sad, na trećoj godini studija, najbolje vrijeme za otići na Erasmus. Možda odemo i na praksu ili diplomski studij u inozemstvo. To su iskustva koja te mogu formirati i koja su neopisivo bitna za tvoju karijeru. Martina je bila čak i na Madagaskaru s jednom volonterskom organizacijom. Pomagala je u pripremi bolničke hrane i u brizi za djecu iz sirotišta. Na Madagaskaru postoji samo jedna cesta i kad se ljudi voze skrenu lijevo ili desno, doslovce u polje, i nastave ravno dok ne dođu do svoje destinacije. To je samo jedan detalj, ali općenito – imaš drukčiji pogled na svijet. Ovdje ćemo ostati 6 mjeseci i otkriti puno stvari o drugim kulturama. Na hrvatskom znamo reći: dobar dan, laku noć, hvala, molim, čokolada, kolači, kiša, oprostite, zovem se Cecilia, učim i Učiteljski fakultet – jer je to naša stanica!

Martina Sereni and Cecilia Serra, Erasmus students

I remember the exact moment when it happened. Last year we were in the library preparing for some exams. Then we had lunch, and headed back to the library. Martina had lunch at home so we didn't see each other for two hours. She looked at me and said: "Ceci, I have an idea." And I was like: "What?" And she told me: "Do you want to go on Erasmus with me?" And I was like: "Yeah? OK! We can do it!" We decided for studies in English in Denmark, Paris and Croatia. When we found out we got in, it was so beautiful.

We come from the same university and live in the same city – Modena, near Bologna, in the north of Italy. Italy isn't like in The Godfather movie. But still, the south has a different view on life from the north. We were in Rome, Pompeii, Sicily... The people are super kind, much like in Zagreb. One night we were coming to the dorm from the centre and weren't sure about the tram number, it was one of our first nights in Zagreb. So we asked the driver, and he didn't speak English. He tried to explain something but we didn't understand so we tried communicating with our hands. Later, he stopped the tram in a place which wasn't his stop – only for us. He showed us the way out and waved goodbye. We were like: "Wow." Nedeljko Štefanić, our professor of production management, told us: "Yes, you are special students for us, you are our guests." He asked the other Croatian students if they wanted the lectures in English or Croatian, and they all chose English so we could also understand. It was very nice of them.

I think that the best time to go on Erasmus is the 3rd year of study. Maybe we could do an internship or master abroad. These are experiences that can form you and that are incredibly important for your career. Martina even went to Madagascar with a volunteering organisation. She helped in preparing hospital food and caring for children from orphanages. In Madagascar they've only one road, and when driving, they turn left or right in a field, literally open land, and continue straight until they reach their destination. That's just one detail, but in general – you gain a different view of the world. We'll stay here for 6 months and discover many things about other cultures. We know how to say in Croatian: dobar dan, laku noć, hvala, molim, čokolada, kolači, kiša, oprostite, zovem se Cecilia, učim and Učiteljski fakultet – it's our tram stop!



Tin Srbić, student

Svatko ima nešto svoje, nešto što voli i što radi. Netko voli čitati knjige, netko igrati igrice, netko voli kopati... Ja volim gimnastiku. Nema nekog posebnog razloga. Otkad me stari doveo u „Hrvatski Sokol“ kad sam imao 4 godine, to mi je bilo zabavno, volio sam to raditi i to je to. Znaš da ćeš se svaki sljedeći dan opet bavljati s ekipom koja trenira s tobom. Svaki dan! U zadnjih 5 godina svega četiri puta sam izostao s treninga. Da ne treniram dva tjedna, trebao bih barem dva mjeseca da nadoknadim. Otkad sam klinac sam toliko organiziran da gotovo znam svaki svoj dan unaprijed.

Prvi put sam sad bio na svjetskom prvenstvu. Meni je bilo super što sam uopće tamo trenirao sa svom tom ekipom, s najboljima u svijetu. I tako, odradim te kvalifikacije, nisam u životu bolje vježbao. Bio sam tamo treći i to mi je bio, ono, šok. Mislim si, u finalu mogu pasti 10 puta, baš me briga, u najboljih sam 8 u svijetu. Dode finale, pripremam se za svoj nastup i znam u glavi: „Samo trebaš napraviti ono što radiš uvijek i prvi si.“ Znam u glavi, ali tad je to najteže za napraviti. Znaš da si tako blizu, a nisi još uopće počeo raditi. Toliko je blizu, a daleko... I tako su mi po glavi išle neke stvari. Kako sam se pripremio, pozdravio sam sudca, hodajući prema spravi izdahnuo i rekao si: „Boli me briga, idem sad napraviti najbolje što znam, makar pao dolje!“ Bilo je čudno iskustvo dok sam radio tu vježbu jer jednostavno kao da nisam bio tamo, kao da sam negdje stajao i gledao samog sebe kako radim. Samo je išlo automatski, toliko sam puta to već napravio. Završio, doskočio i u toj sekundi znao: „Da, to je to.“ Morao sam čekati tih 5 minuta za ocjene, koje su mi prolazile kao pola sata. Shvatio sam da sam prvi. Gledam kaj sad, kaj se događa... Bilo je malo nestvarno uopće, još mi je sad. Trenutno mi je najveća želja otići na Olimpijske igre.

Odlično mi je što imam prilike puno putovati i što imam prijatelje iz različitih krajeva svijeta. Divio sam se gradovima poput Montreala, Pariza, Moskve, Doha... no tako sam i uvidio koliko volim Zagreb, koliko volim ljude koji me dočekuju i čestitaju mi na uspjesima, pa čak i trube iz auta, te ljude s kojima treniram odmalena. Lijepo je za vidjeti sve te države i gradove, ali dosad nisam našao niti jedno drugo mjesto na svijetu gdje bih radije živio.

Tin Srbić, student

Everybody has something they like doing. Somebody likes books, another person likes video games or shovel digging... I like gymnastics. There's no particular reason for that. Ever since my father took me to "Hrvatski Sokol" when I was 4 years old, I have enjoyed doing it. That's all there is to it. You know that you'll have fun with your training team every following day. Every day! In the last 5 years I've missed my training only four times. If I didn't train for two weeks, I would need at least two months to compensate for that. Ever since I was a kid, I've been so organised that I know almost every move for the next day.

I participated in the world championship for the first time. It was simply fantastic just being there and training with all those people, the best in the world. So, I went through the qualifying rounds by doing the best exercise in my life. Winning third place was, simply, a shock for me. After that, I thought to myself: 'Even if I fall ten times, I don't care, I belong into the world's top 8'. However, the finals came and I tried to prepare mentally for my performance. I said to myself: "You just need to do the same things you always do and you will end up first." I knew exactly what I had to do, but doing that was the hardest thing to do. I seemed to be so close even before I even tried and yet so far from it all. Still a lot of work to do... So many things on my mind. After getting warmed up, I greeted the judge as I was walking towards the gymnastics apparatus, and then I exhaled, thinking to myself: "I don't really care. let's do my best, even if I fall down!" It was a weird experience, doing this exercise, because I felt like I wasn't even there. It felt like I was standing somewhere else, watching myself performing. I did it automatically, just like many times before, repeating all those figures. Once I was done, after the landing, I knew at that very moment: "This is it!" I had to wait for 5 minutes, which felt like half an hour to me, for judges to make their decisions. I realized I'd won first place. I just couldn't figure out what was happening, what to do... It was a little surreal, and it still feels that way. Right now, my greatest wish is to participate in the Olympics.

It's great to have a chance to travel a lot and to have friends from all over the world. I was stunned by big cities like Montréal, Paris, Moscow, Doha... Yet, I've perceived how much I like Zagreb, people who welcome me and congratulate me on my accomplishments, even with cars honking, and the people I have been training since I was a kid. It's nice to see all those countries and cities, but, so far, I haven't seen any other place I would rather live than in Zagreb.



Luka Kasumović, student

Čovjek koji ispred Filozofskog prodaje knjige mi je rekao da mu je neobično vidjeti da strojar čita Dostojevskog. Knjige kupujem od njega i na Glavnom kolodvoru i uvijek se cjenkam! Uzeo sam i par knjiga od Tolstoja i Cvjetove zla od Baudelairea. U pauzama od termodinamike čitam Braću Karamazove, već sam pri kraju prve knjige, na nekih tristotinjak stranica. Dostojevski ide „u dubine“ – filozofira, njegovi razgovori su temeljeni na temama koje nisu svakodneвне, situacije razlaže na manje dijelove i traži njihov uzrok. Gubim se kad ga čitam, neka poglavlja moram i po dva, tri puta proći. Nedavno sam na Interliberu uzeo Bulgakova i njegovu Majstora i Margaritu. Počeo sam ju čitati, a znam da sam si rekao da ću prvo dovršiti Braću Karamazove...

Ja sam iz Novske i tamo ima jedno jezero i puteljak koji vodi do njega. Kako ideš prema jezeru sve je rjeđa naseljenost. Nakon faksa sam mislio otići van raditi na par godina, vratiti se i u šumi u blizini jezera izgraditi kolibu. To bih ja nazvao nekom vrstom moderne kolibe jer bi njena arhitektura bila modernistička, interijer pun svjetlosti, oko kuće šuma i na kući solarni paneli. Ne vidim se u gradu nego negdje gdje ću sam napraviti nešto i sam proizvoditi hranu. Ja se moram vratiti u prirodu, ne osjećam se dobro ovdje, u gradskom zraku kojeg udišem. Puno se vremena gubi na multimediju pa već više od godinu dana nemam Facebook, nije mi potreban. Neki su se moji poznanici prestali razvijati baš u vremenu koje je predviđeno za to. Ne čitaju ništa, žele samo završiti faks. Samo pare, profit i stabilan posao. I kad dobiju pare, ne znaju što će s njima. Kupiti auto i s time se zadovoljiti. Ja nisam po ničemu „drukčiji“, samo sam realan. Razmišljam.

Gledao sam nedavno dokumentarac koji pokazuje kako bi izgledao čisti utopizam bez novca. Naslov mu je The Choice is Ours, od organizacije The Venus Project. Ali nebitno je čija je ideja, činjenica je da su tehnologije koje posjedujemo već odavno bile dovoljne da riješimo bitne probleme čovječanstva – transport, energiju, hranu, vodu, stambeno zbrinjavanje – ali da društveni sustav u kojemu živimo ne dopušta da se one primjene. Svi govore o rastu, ali pitanje je trebamo li tehnološki rasti unedogled? Ako već sada imamo hiperprodukciju u gotovo svim granama industrije?

Luka Kasumović, student

The man who sells books in front of the Faculty of Humanities and Social Sciences told me that he found it unusual to see a student of mechanical engineering reading Dostoyevsky. I buy books from him and from a bookstand in front of the main railway station in Zagreb. I always do a bit of bargaining I also bought a couple of books by Tolstoy and Baudelaire's Flowers of Evil. I read The Karamazov Brothers when taking breaks from thermodynamics, and I'm at the end of the first book, that is some three hundred pages. Dostoyevsky goes deeper – a true philosopher, his conversations are based on unusual topics, he dissects situations into smaller bits and seeks out their cause. I lose myself when I read his books and have to read some chapters two to three times. I recently picked Bulgakov's The Master and Margarita at the Interliber book fair. I started reading it, even though I said to myself that I would finish The Karamazov Brothers first...

I am from Novska. In Novska there is one lake and a road leading to it. As you move towards the lake the population decreases. After college I plan to work abroad for a couple of years and then come back, and build a cottage in the forest near the lake. I would call it a modern cottage because its architecture would be modernistic, full of light, surrounded by the forest, and with solar panels on top of it. I do not see myself living in a city but rather somewhere where I'm going to make something on my own and grow food by myself. I have to go back to nature, I do not feel good here, in this city air I breathe. A lot of time is lost to multimedia. That is why I haven't had Facebook for more than a year. I don't need it. Some of my acquaintances stopped developing themselves at the time that is precisely meant for such ventures. They don't read anything, they just want to finish college. Only money, profit and stable employment. And when they get the money, they don't know what to do with it. Buy a car and be 'satiated' with it. I am not actually "different", just realistic. A thinker.

I recently watched a documentary showing how pure utopia would look like, a society without money. The title was The Choice is Ours, made under The Venus Project. It doesn't matter whose idea it is, the fact is that the technologies we possess have been able to solve the fundamental problems of mankind – transport, energy, food, water, housing. But the social systems we live in do not allow their application. Everyone talks about growth, but the real question is whether this growth should continue indefinitely. We already have hyper-production in almost every industry branch.



Branko Hiršl, alumnus

Ono što me najviše zanima su inovacije i osmišljavanje novoga. Otpočetak se bavim time i to je za mene duševna hrana. Kad radim inovacije nije mi dosadno. Brzo pamtim, a brzo i zaboravljam, zato me strojarstvo i privuklo. Upisao sam faks 72', smjer Motori i vozila. Pamtim nacрте motora na sastavnicama velikih formata. Kad sam bio student izgledali su mi užasno, kao da se crtaju godinu dana, a govorilo se da na njih ne možeš baciti kovanicu od 5 dinara, bez da padne na neku od nacrtanih linija. Jako me zanimalo konstruiranje.

Najljepše mi je raditi u većoj firmi. Stalno se suočavaš s nekim novim zahtjevima i problemima. Ja u Gredelju radim kao firma u firmi. Projektiram, konstruiram, napravim tehnologiju, pustim u proizvodnju, pratim u proizvodnji. Profesionalizam mi je najvažnija stvar u životu, želim napraviti svaki posao najbolje moguće, najgore je šalabajzati. Tako smo jednom radili nekakve kabine za kranove za Nijemce. Nikad to prije nismo radili, nije to toliko jednostavno. Te kabine imaju vrata s metalnim prozorom, ne bezvezna, već dosta specifična, izolirana, dvostruko brtvljena, od milimetarskog lima, s ojačanjima. Vrata nam je napravila jedna firma i poslali smo naručene kabine u Njemačku. Međutim, Nijemci su ponovo naručili, a ovi su se prvi puta toliko namučili s vratima da nam ih više nisu htjeli isporučiti. Kažu oni meni: „Ajde, ti, Hiršl, napravi vrata, imaš mjesec dana!“. K'o da je to sam' tak'. Ha dobro, ajde, zasučem ja rukave, gledam primjere tih vrata, ali ne znam kako su napravljena, ne znam kako izgledaju iznutra. I ništa, ja sam to sve izmislio. Dao sam vrata u proizvodnju i ugradili smo ih. Nijemci su slijedeći puta tražili ponudu specifično za ta vrata, jer su ta vrata odlična. I naruče oni još jedna desna vrata, ona koja smo napravili, ali onda su zatražili još i troja lijeva... I natrag na posao. Ako hoćeš napraviti nekakvu dobru stvar, inovaciju, nećeš moći biti na miru u slobodno vrijeme. Mogao bih ići u mirovinu, jer imam uvjete, ali ne želim. Makar imam četiri unuka i dvije unuke. Nikad u životu nisam bio sretniji nego kad sam postao djed. Divno je gledati što sve znaju, kako odrastaju, kako polako počinju manipulirati. Meni je to također fascinantno i nevjerovatno.

Branko Hiršl, alumnus

My field of interest are innovations and new designs. I've always been engaged in these fields and that is my soul food. Working on innovations never gets boring. I have an excellent memory, but I also forget quickly, this is the reason I got attracted to mechanical engineering. I enrolled in the Faculty of Mechanical Engineering and Naval Architecture, specializing in IC engines and Motor Vehicles in 1972. I remember some engine drafts on large format sheets. To me as a student, they looked horribly complicated, like they took a year to be drawn, and it was said that if you tossed a 5 dinar coin, it would be impossible to do so without it falling on a line. I was very much interested in engineering design.

I prefer to work in a large company. It is a constant confrontation with new applications, requests and problems. My work in the Gredelj company is like I'm a company inside another company. I plan, design, evaluate production technologies, manage the production and monitor it. Being professional is the most important thing for me. I strive to do any work in a best possible way, for fooling around is the worst. So, once we had to make some crane cabins for the Germans. We'd never made these before, and it was not that easy. These cabins had doors with a small metal window. The doors were not some generic ones, but pretty specific, insulated, double sealed, made out of millimeter sheet metal, with reinforcements. We had them made by another company. So we sent those cabins to Germany. But the Germans ordered some more. The company we got those doors from had found this task so complicated they gave up sending us another batch. So, in Gredelj, They came to me: "Come on, Hiršl, go and make the doors yourself. It needs to be done by the end of the month!" Like it is a piece of cake. Well, okay, I rolled up my sleeves, looked up some similar door models, but I had no clue how it looked on the inside. Never mind, I said, and made it all by myself. I put it in production and we assembled the doors. Afterwards, the Germans demanded those specific doors, because they were so great. They ordered another right door, like the one we have designed, but they also ordered a batch of three left ones... So I had to get back to work. If you are keen to do something good, something innovative, you sacrifice all your free time. I could retire, because I meet the requirements, but I don't want to although I have four grandsons and two granddaughters. I was never happier than when I became a grandpa. It's wonderful to see how they grow up and start to handle things. That is also fascinating and incredible to me.



Marin Njirić, vanjski suradnik

Kad sam studirao, odlučio sam prekinuti s curom da mogu učiti termu i počeo sam planinariti! Ona mi nije vjerovala. Rekao sam da moram birati između nje i terme, a da će me ako izletim s faksa ionako ostaviti zbog nekoga s više para. Istina, to nije bio jedini razlog. Intenzivno sam se počeo baviti planinarenjem 2007., a web stranica High On Steep je nastala ove godine. U vodiču ti ne smiju napisati: Ova staza je bezveze, dosadna je, nemoj ići tu; ovdje idi samo ako imaš stav i nisi smotan k'o sajla. Ja mogu to napisati. Medvednica ima preko pedeset nacrtanih staza. Sad da ti kreneš, evo na primjer, sutra vi odlučite na Medvednicu: Kuda ćemo? –A nemam pojma, negdje di je fora... A kako znaš da je fora, kad nigdje ne piše gdje je fora? Ljudima se to ne da, ispada da je nuklearna znanost pa odustanu. I odmah kažu: Neću ići nigdje, ne znam kako. A na sat vremena od Zagreba ima toliko lijepih lokaliteta o kojima ljudi nemaju pojma i koji nisu nacionalni parkovi.

Nemam druge ambicije prije nego istražim Hrvatsku, koja je toliko lijepa. Ma samo za Velebit doživjeti postoje stotine načina, mnoge od njih iskuse samo rijetki. Jedan život nije dovoljan da prođeš cijeli Velebit. To je neopisivo bespuće. Ogroman je. Upoznao sam gorštaka Vladu Prpića Prpu koji ima 72 godine i živi na Velebitu. Živi život kakav mnogi misle da je nemoguć, nedohvatljiv. U njemu je više srčanosti od nekih ljudi mojih godina... Kada se uspinješ, pogled je bitan, ali nije sve. Poseban doživljaj pruža i činjenica da su neka mjesta radnje udaljena minimalno jedan dan jakoga hoda od najbliže civilizacije. A tu hipstera nećeš sresti. Kad se nakon što si bio na vrhu vratiš među ljude još par dana vibriraš! Ta me planina toliko privlači da joj se vraćam svakoga ljeta.

Marin Njirić, external associate

When I was studying, I decided to break up with my girlfriend to study thermo and start hiking! She didn't believe me. I said I had to choose between her and thermo, and that if I didn't finish college she would leave me anyway, for a guy with more money. To tell the truth, that wasn't the only reason. I had been intensely involved in hiking since 2007, and High On Steep website came about that year. This website is about stuff you can't find in a travel guide. 'This path sucks, it's boring, don't go there. That one is only for those who have the guts and don't have two left feet', I can write that. Medvednica has over fifty drawn paths. If you are about to go there – let's say tomorrow: 'So, which path are we taking? –I don't know, somewhere fun.' And how do you plan on doing that if you can't tell where those fun places are? People are not into that kind of deals, as if it was a nuclear science, and they give up: 'I won't go anywhere. I don't know how.' And for about an hour ride from Zagreb there are so many beautiful places that people have no idea of, which are not national parks.

I have no other ambitions until I fully explore Croatia, which is so beautiful. There are hundreds of ways to experience Velebit solely, many of them to be experienced by only a few. One life is not enough to get acquainted with the mighty Velebit. It's an indescribable vastness. Colossal. I met Vlado Prpić Prpa, a 72-year-old, who lives in Velebit. He lives a life that many people deem impossible, unattainable. He has more zest than some people my age... When you climb, the view is important, but it's not all there is to it. A special sensation is provided by the fact that some places are within only a day of brisk walk from the closest civilization spots. And there you won't see hipsters. When you get back down after an outdoor adventure, you continue vibrating for the next few days! That mountain entices me to come back to it every summer.



Stipe Skroče, alumnus

Kad sam bio dite, did me forsira: „Šah, šah, šah!“. Tjerao me da igram e4e5, skakač Nf3, skakač Nc6, čistu talijanku. Dvi godine samo talijanka. To je dobro za početnika, no nisam znao da šah ima bezbroj lica, bezbroj taktika... Zgadilo mi se, 10 godina nisam taknuo šah. Šah je vježba, kao i matematika. Ako imaš nit, onda ti bude lakše. Kad sam se upisao na faks, stigla je obavijest da je sveučilišno natjecanje u šahu. Taman sam došao kad je otišla velika generacija šahista na strojarstvu, 3–4 puta prvaci. Došao sam na natjecanje i tamo je bila neka ekipa s medicine, a kako je iz Zadra dosta ljudi upisalo medicinu, bio sam povezan s njima. Oni su bili ka sekta organizirani, to mi se jako sviđjelo, došao je glavni vođa i uz njega deseterica. Ubacio sam im se, budući da sam ih znao. Pozvali me da dodem na medicinu igrati šah i tako sam skoro bio jedan od njih, medicinar. Onda mi je palo na pamet napraviti to na strojarstvu jer toga nismo imali. Tako je sve počelo. Sad podučavam nove generacije šahista.

Po meni, najbolje je igrati takozvani kafanski šah. Najlipša stvar u šahu je kada igraš, pričaš, popiješ koju... To je duh šaha! Ne kada mučiš i dosadno je za gledati, a nije ni gušt igrati. Tako je šah ponovno oživio u Francuskoj početkom 20. stoljeća. To je bila zaboravljena igra, igrala se samo na dvorovima, a onda je oživjela. A di? U kafićima. Piva, duhan, šah! To je bio gušt! Stvarno bih to volio, jednog dana otvoriti kafanski šah, no kultura šaha je zasad tu nepostojeća. Ako se otvori prilika i uspijem uštediti, otvaram kafić za šah, to mi je zadnji čin.

Po meni je psihologija jako bitna i u životu i strojarstvu, znati pristupati ljudima. Terma me naučila životu. Postoji proces, i on se događa u trenutnoj slici. Nema nastanka energije, već samo pretvorbe. Kao inženjer treba gledati logiku svega, cijelog života, jer cijeli tvoj život je zapravo granica sustava, a načina je bezbroj. Najbitnija stvar za mene je pronaći balans između hedonizma i odgovornosti.

Stipe Skroče, alumnus

When I was a kid, my grandpa would always push me: “Chess, chess, chess!” He made me play e4e5, Nf3, Nc6, the standard Giuoco Piano opening. For 2 years only the Giuoco. That’s good for a beginner, but I didn’t realize that chess has a countless number of faces & tactics... It made me sick, after that I didn’t play chess for 10 years. Chess is a practice, just like math. If you got a thing for it, it’s easier. When I started my undergraduate studies, a notice came for a university chess tournament. At that time, the big chess generation graduated mechanical engineering. They were champions for 3–4 times. I came to the tournament and there were some medical students. As many people from Zadar enrolled the Faculty of Medicine, I was connected with them. They were organized like a cult, I liked that, the chief came with ten of them. I joined them, as I already knew some of them. They invited me to play chess with them at their faculty and soon I almost became one of them, a medic. Then it popped into my head to found a chess club at the Faculty of Mechanical Engineering, as we didn’t have one. And so it all began. Now I teach new generations of chess players.

I think it’s best to play the so called “café chess”. The prettiest thing about chess is when you play, you talk, you have a drink... That’s the spirit of chess! When you are silent, it’s boring to watch and also to play. That is how the game of chess got revived at the beginning of 20th century in France. Until then, the game was forgotten and it used to be played exclusively in courts. And where did it revive? In cafés. Beer, tobacco and chess! That was real joy! I would love that very much to open a coffee room for chess, although here, the culture of playing chess does not exist yet. If I get the chance and save some money, I will open a chess coffee room, if it’s the last thing I do.

I find psychology important for engineering as much as for life, the ability to approach people. Thermodynamics taught me how to live my life. There is a process, which occurs in a current image. There is no energy occurrence, but only energy conversions. Engineers should look at the general logic of everything, all their lives, because your whole life is actually a system boundary, and there is a myriad of ways to complete it. The thing I find the most important is to find the right balance between hedonism and responsibility.



Marija Baković, studentica

Rodica je tila ići u školu negdi vani, već od petog osnovne. Slala je molbe i u trećem srednje joj pošalju poruku da može doći u srednju školu u Hong Kong. Mislila se hoće li prihvatiti, i na kraju je otišla! To ti je ono: „Uporni uspiju“, njoj su se svi smijali kad je slala te molbe i govorila gdje želi ići. Sad je četvrta godina srednje i u igri su joj Abu Dhabi, Florida... Ja idem za njom, pratim je, idem i kad će biti dodjela diploma. Reći ću joj: „Pa di ćeš drugo nego u Abu Dhabi! Nešto mi se tamo ide.“ Pokazat ću joj sliku dok smo bile male: „E, ovo smo ti i ja dok nisi bila poznata!“ Obje smo iz Duvna, pa je meni preseljenje u Zagreb bio taj veliki skok.

Oduvijek sam voljela matematiku. Od čuda su mi u drugom osnovne govorili: „Čekaj da dođeš u osmi razred“, u osmom su govorili: „Čekaj da dođeš u srednju“... U srednjoj sam išla na izbornu iz matematike zajedno s još devetero, a profesorica je rekla: „Od vas desetero, tko je stavio na popis matematiku?“ Ja sam jedina dignula ruku. „A što je s vas ostalih devetero?“ – „Nije bilo mjesta na našim izbornima pa smo ovdje ubačeni prisilno jer je grupa bila prazna.“ Ja sam osoba koja, nakon što je s ekipom bila navečer u gradu, dođe u dva sata doma, stavi slušalice, uzme zbirku iz matematike i rješava. Meni mater dolazi u tri sata u sobu i kaže: „Pristani vježbati, dosadna si, izadi malo iz kuće!“ Odrasla sam sa svime što mi sad radimo – tokarilice, garaža... Meni čaća dođe: „Očeš mi probušiti sto pedeset pločica, dat ću ti jedno dvadeset maraka?“ Ja odgovorim: „A sto pedeset pločica, ne može tako, ajde barem neku cifru da uvedemo. Trideset maraka.“ I tako cijeli dan bušim pločice, dolje u garaži. U mojoj ti kući majstor nije bio nikad u životu. Porazno je da kao strojarski fakultet praksu dobivamo tek na trećoj godini, mislim da bi se to trebalo promijeniti jer većina ljudi nije imala priliku vidjeti stvari o kojima uče.

Marija Baković, student

My cousin wanted to go to school somewhere abroad, she wanted it from the fifth grade of elementary school. She had been sending applications and in the third year of high school she received her acceptance letter from a high school in Hong Kong. She hesitated but finally decided to go for it! Like when they say, “Who dares, wins,” everyone laughed when she was sending the applications and telling where she wanted to go. She is now in her fourth year of high school and is thinking of Abu Dhabi, Florida... I follow her everywhere, and I’ll be there when she gets the diploma. I’ll tell her, “Well, it’s only natural for you to choose Abu Dhabi! I really feel like going there.” I’ll show her a picture of when we were little, “Well, this is you and me before you were famous!” Both of us are from Duvno, so moving to Zagreb was that big leap in my case.

I’ve always loved math. When I was in my second grade of elementary school, people puzzled by it used to tell me, “But wait until you see the eighth grade,” in the eighth grade they said, “But wait until you see high school...” I chose a math elective in high school, together with nine other people and the professor said, “Who put math on their list?” I’m the only one who raised a hand. “What about the other nine?” – “The quota for our electives was exceeded and we were forced here because this group was empty.” I am that person who, after having a night out and coming home at 2 a.m., puts on the headphones, takes a math workbook and starts solving it. My mom comes to the room at 3 a.m. and says, “Stop practicing, you’re boring, get out of the house once in a while!” I grew up watching everything we mention at the Faculty – lathes, garage... My pops asked me, “Will you drill through one hundred and fifty tiles, I’ll give you twenty marks?” I said, “Not so easy, we are talking about one hundred and fifty tiles, we should raise the bar. Thirty marks.” And so I drilled the tiles all day, down in the garage. The repairman hadn’t set foot inside our house. It’s a shame, for a mechanical engineering faculty, that we get to do internships as late as the third year, I think that should be changed. Because most people didn’t have the opportunity to see the things they are learning about.

**Edi Martinez, student**

Moja obitelj je iz Varaždina, a vučemo daljnje porijeklo iz Španjolske. Jedan Martínez se navodno doselio ovdje poslije jednog rata u Španjolskoj, vjerojatno Tridesetogodišnjeg rata u 17. stoljeću te smo od tada Varaždinci. Ima čak i knjiga o tome. Strojarstvo mi nije bilo prvi izbor, no u zadnji sam se tren predomislio, a mislim da je glavni krivac za to moja opsesija automobilima. S vremenom se moje shvaćanje studija mijenjalo. Prije nego što sam se upisao, mislio sam da su inženjeri ti koji popravljaju stvari, kasnije mi se činilo da modeliraju, a sad mi se ipak čini da većim dijelom računaju. Za ljubav prema autima su najviše krivi deda i tata. Oni se bave autima i kamionima, pa sam imao prilike vidjeti autodijelove i za kaj se koriste. Trebali bi imati više prakse na faksu jer je tak puno zabavnije učiti i bolje naučiš. Doma imamo radionicu za popravke kamiona i prije faksa sam često radio tam, pomagao dedi. Naš auto Saab smo isto tam uredili jer kad smo ga kupili nije bio u ponajboljem stanju. Vozio ga je neki odvjetnik koji nije previše održavao motor, pa smo deda i ja zasukali rukave i krenuli popravljati. Kad nam je jednom prilikom zatrebala dizalica za motor, odlučili smo je posuditi od jednog suseda automehaničara, nekoliko ulica dalje. Pješice sam je dovukao do naše radionice, kaj i nije bilo najbolje rješenje. Bacili smo se na posao, sve smo pripremili, odšarafili sve, podigli motor, kad u tom trenutku zazvoni telefon. Bil je to sused, došla mu je stranka i treba mu hitno dizalica. Stavimo motor na paletu i paljba, s dizalicom do suseda. Posudimo opet kroz vuru vremena, sredimo motor i stavimo ga natrag. Baš je pogodio pravi trenutak.

Edi Martinez, student

My family comes from Varaždin, but we originate from Spain. Apparently, one Martínez immigrated here after some war in Spain, possibly the Thirty Years' War in the 17th century. Since then we are Varaždinians. There is even a book about it. Mechanical engineering wasn't my first choice, but I've made my decision in the last minute, thanks to my obsession with cars. My perception of these studies changed with time. Before I enrolled, I thought that engineers are those who repair things, later it seemed that they model things and now it seems that most of the time they compute things. My grandpa and my dad are to be blamed for my love of cars. They work with cars and trucks, so I had a chance to see all kinds of car parts and what they are used for. We should have more practical work at the faculty, because it's more entertaining to learn and better for sure. At home, we have a truck workshop and I've worked there often before college, helping grandpa. We fixed our car Saab there, because when we bought it, it was in a pretty bad shape. Some lawyer drove it, who didn't pay much attention to the engine, so my grandpa and I got down to work. We needed an engine crane so we lent it from a neighbour who was a car mechanic, a few blocks away. I dragged it to our workshop and we got down to business. We prepared and unscrewed everything, raised the engine, when the cell phone rang. It was our neighbour, a customer came and he needed the crane urgently. We put the engine on a palette and quickly ran with the crane to the neighbour. We lent it again after an hour, fixed the engine and put it back. His timing was perfect.



Frano Penava, alumnus

Za bicikl od bambusa čuo sam tri godine prije no što sam napravio svoj. Tema završnog rada bila mi je primjena prirodnih materijala u vozilima, gdje sam se susreo s time i dobio ideju za temu mog diplomskog – bicikl od bambusa. Kako doma imam nekoliko bicikala i volim eksperimentirati s dijelovima, odlučio sam ga i napraviti. Uspostavio sam kontakte s ljudima koji se bave bambusom te mi je prilikom nabave materijala najviše pomogao jedan Austrijanac. Najviše sam vremena potrošio na pripremu, istraživanje, pokuse te izradu alata i dijelova, dok je samo sklapanje u garaži trajalo tri dana. Krajnjim su rezultatom svi bili oduševljeni, a mislim da mi je to pomoglo i u potrazi posla. Trenutno radim na konstrukcijama spojnih dijelova za dalekovode, a odlično je što imam pristup velikom broju tehnologija o kojima sam slušao na faksu, pa ću ovdje još puno naučiti. Nakon promocije, kad su mi javili da sam dobio posao, imao sam još dva tjedna prije početka rada. Kako bih isprobao bicikl da li valja, otišao sam njime na put prema moru. Prvi sam dan napravio najviše kilometara. Kako sam sa sobom imao šator, nakon što sam prošao Ogulin, odlučio sam negdje prespavati. Razmišljao sam o kampiranju u šumi, ali nakon brojnih znakova upozorenja, medvjed ovdje, medvjed ondje, ipak sam odlučio otići u jedno od sela. Pitao sam mještane mogu li u njihovom dvorištu podići šator te su me oni, naravno, pozivali u kuću, što sam pristojno odbio i podigao šator. Djeci je to bilo nevjerojatno, koji to luđak kampira u dvorištu. Meni je tamo bilo odlično, uzeo sam pivicu i zaspao, uživajući u pogledu na milijun krijesnica. Oko četiri ujutro probudio me prodoran zvuk kukurikanja pijetla, a tek sam tada primijetio da sam postavio šator kraj kokošinjca. Nastavio sam do Senja, pa do frendice na Krk, pa do frenda u Rijeku, još sam se zaputio prema Italiji, ali više nisam imao vremena. Nakon mnogobrojnih planinarskih pohoda po skoro cijeloj Hrvatskoj, Crnoj Gori i Makedoniji, bike touringom sam se počeo baviti prije nekih pet godina. Putovanja biciklom preporučam svima. Krenite i samo hrabro! San mi je jednog dana živjeti na samoodrživom imanju, u dodiru s prirodom, sam proizvoditi hranu. Imam babu kraj Posušja, ima 95 godina i još uvijek kopa u vrtu i sadi povrće. Ne zna pisati, ali ne biste vjerovali kolika mudrost pršti iz nje!

Frano Penava, alumnus

I had heard about a bamboo bicycle three years before I made my own. The topic of my bachelor's thesis was the application of natural materials in vehicles, where I encountered with it for the first time and gained an idea to make a bamboo bicycle the topic of my master's degree. Since I had a few of bicycles at home, and since I like to experiment with bicycle parts, I decided to make one. I got in touch with people who worked with bamboo, and an Austrian guy helped me the most with material gathering. Most of the time I spent in preparation, research, experimenting and crafting certain tools and parts, while the assembly took only 3 days in the garage. Everyone was thrilled with the final result and it helped me also in finding a job. Now I'm working on designing joint parts for power lines and it's excellent to have access to such an amount of technologies about which I've heard at the faculty, so I think here I'll learn a lot of new things. After my graduation ceremony, when I found out that I got the job, I had two weeks before the job started. In order to test the bicycle, I went on a journey to the seaside. I managed to cross the most kilometres on the first day. As I had a tent with me, I decided to sleep somewhere after passing Ogulin. I was thinking about camping in the woods, but after seeing lots of „beware of bear“ signs, I decided to go to a nearby village after all. After I asked the locals for a spot to set a tent in their courtyard, naturally, they responded by inviting me in, which I refused politely. Children found it fascinating, that some lunatic set up a tent in their courtyard. I enjoyed staying there, grabbed a beer and fell asleep after enjoying a view among a million of fireflies. Around 4 a.m. I was woken up by a stuttering sound of their rooster, minutes before noticing I put my tent a couple of steps away from a henhouse. I continued my trip towards Senj, then stopped by a friend at Krk, and carried on to Rijeka. I wanted to proceed to Italy, but sadly I didn't have enough time. After a variety of hiking trips around Croatia, Montenegro and Macedonia, I started with bike touring about five years ago. I recommend bicycle trips to everyone. Go ahead with it and just be brave! I dream of having a self-sustaining property, to produce my own food, live in nature. My grandma lives near Posušje, she is 95 years old and she still cultivates her own garden. She cannot write, but you wouldn't believe how much wisdom can come out of her mouth!



Zoran Domitran, docent

Cijeli sam život bio predisponiran da se bavim ekstremnim sportovima i već se 15 godina bavim paraglidingom. Ne volim nogomet, ne volim košarku, ne volim grupne sportove. Još kao klinac sam počeo skijati, ali sam ustvari htio biti padobranac. U ono vrijeme nisam imao novaca, donekle lošeg zdrastvenog stanja, komplicirano je bilo svaki dan voziti iz Svetog Ivana Zelina – uvijek nešto. Bio sam klinac te 2002., taman su bili počeci Interneta tako da je bilo teško naći gdje ćeš krenuti. Onda sam našao jednu gospođu koja sad više ne leti i ona me uputila u taj svijet. Taman sam upisao i faks. Paragliding nije isto što i padobranstvo, iako se i tu leti bez motora. Doguraju vas na nizbrdicu, stavite opremu na leđa, zadržite se i krilo se digno. Cijelo vrijeme vježbaš uzlet i kako se dočekati na noge. Otprilike možeš procijeniti gdje ćeš sletjeti, imaš komande koje cijelo vrijeme doziraš. Samo krilo ima rupe kroz koje se puni i, pošto ima aerodinamički profil, diže se. Kod nas se malo više prakticira ravničarsko letenje – odvojiš se od brda i onda po ravnica tražiš tzv. „termičke stupove“ i letiš u njih. „Termika“ je ustvari dizanje toplog zraka. Određene površine se zbog zračenja sunca zagriju pa se topao zrak u jednom trenutku odlijepi od površine i čini termički stup. Kada je lijep dan puno je mjesta na zemlji odakle se topli zrak diže gore. Ako ga kao paraglideri nađemo, zadržimo se dovoljno dugo u njemu i idemo s njime gore – sve dok ne dođemo do oblaka. Baza oblaka je mjesto kondenzacije, pitajte našeg prijatelja Fekija (op.a. Nenad Ferdelji, docent na termodinamici), on bi vam to sigurno mogao pojasniti. Može se nastaviti i kroz taj dio, ali je poprilično opasno jer kad izgubiš vizualni kontakt sa zemljom onda počinju problemi u glavi. Osjećaj je kao da si na ljuljački koju netko trese. Cijelo vrijeme te nešto vuče lijevo-desno, a ti ne smiješ ništa raditi. Pitaju je li opasno ali, gledajte, sve je opasno. Po zakonu velikih brojeva, ako se dugo baviš nečim, mora ti se dogoditi neka neočekivana situacija. Nakon godinu dana si najopasniji jer misliš da znaš. A ustvari ne znaš. Nakon godinu dana sam polomio obje noge, pa slomio trticu. Ali da nisam slomio noge ne bih nikad položio termu! Ne bih imao vremena učiti.

Zoran Domitran, assistant professor

I've been predisposed for extreme sports since my early days and I've been paragliding for 15 years. I don't like football, I don't like basketball, I don't like group sports. As a kid I started skiing, but I really wanted to be a parachute jumper. At that time I had no money, I had some health issues, it was complicated to drive every day from Sveti Ivan Zelina – it was always that something. I was a kid back in 2002, it was the beginning of the Internet, so it was hard to know where to go. Then I found a lady who introduced me to that world, although she isn't flying anymore. I just started college. Paragliding is not the same as the parachute jumping, although both enable you to fly without a motor. You go to a downhill, put the equipment on your back, sprint, and the wing flies up. Taking off and landing is what you practice mostly. You can make a rough estimate of where you'll land, and brake lined helping the manoeuvre. The wing has holes through which it fills up and rises because of its aerodynamic profile. In Croatia it's common to paraglide over flatter land – you take off from a hill and then hover over the plains looking for so called "thermal pockets" and you fly into them. Thermal pockets are upwards-traveling columns of warm air. Some surfaces are heated by sun radiation, so the warm air is at one point detached from the surface and makes a thermal column. There are plenty of places where warm air rises up during sunny days with a few clouds. If we find them, the point is to stay in their space for a time long enough to lift you towards the clouds. The base of the cloud is a condensation point, just ask our friend Feki (A/N Nenad Ferdelji, Assistant Professor in Thermodynamics), he will surely give you a clear explanation. You can continue flying through that part, but it is quite dangerous because when you lose visual contact with the earth the problems in your head begin. You feel as if you are on a swing that someone is shaking. All that time you are dragged from left to right, and you can't do anything about it. They ask if it is dangerous but, look, everything is dangerous. By the law of large numbers, if you are dealing with something for a long time, you will certainly experience an unexpected situation. You are the most dangerous after one year of training, because you think you know it all. But actually you don't have a clue. After one year I broke both of my legs, and I broke my coccyx. But if I hadn't broken my legs I would have never passed Thermodynamics! There would be no time left for studies.



Igor Čatić, profesor emeritus

Iskustvo koje sam stekao učenjem alatničarskog zanata u Tvornici računskih strojeva i tada Kontaktu te radom u alatničarskoj radionici Štanca, u vlasništvu mog oca, može se podijeliti u dva dijela. Kako sam usporedno išao u gimnaziju i učio zanat, morao sam položiti i ispite koji su bili razlika za zanatsku školu. Zato su me tada interesirale, popularno rečeno, tehnologije. Neki temeljni predmeti su mi se tada činili nepotrebnim, primjerice termodinamika. No, kasnije sam doktorirao na temi izmjene topline u kalupima za injekcijsko prešanje. Učenje zanata i stečena znanja su mi omogućila pogled na cjelinu stvarnog života i teorijskih osnova. Prema tome, mislim da je to iskustvo, koje se očitivalo u konkretnim konstrukcijama kalupa i ostalih alata, jako puno pomoglo. Mislim da je to iskustvo bilo odlučujuće kad mi je profesor Pierre Dubois, nakon razgovora s njime i njegovim zamjenikom, ponudio da budem volonter u Centre d'études des matières plastiques u Parizu.

Godine 1987. u svijetu je po prvi puta načinjen proizvod koji nije načinjen u kalupu, već aditivnom proizvodnjom, preciznije postupkom stereolitografije. Nedavno smo objavili rezultate naših istraživanja u kojima smo dokazali da je prirodni model za te postupke nastajanje taložnih stijena. Ugledajte se u prirodu! Aditivna proizvodnja je primjerice vrlo zastupljena u medicini. Katedra za preradu polimera postigla je svjetske rezultate ugradnjom 3D tiskanog kralješka. Ovaj je Fakultet uvijek imao i ima veći broj nastavnika koji su, slobodno rečeno, avangarda! To su bile neizmjerne jake ličnosti s određenim iskustvom. Razlikujem stručnjake i osobnosti – moji mentori, profesori Đurašević i Menges, to su bile osobnosti. Osobe koji nisu zadubljene samo u svoje područje, nego su vidjeli cjelinu, ljudi s integritetom. Nedostaju nam danas, i ne samo nama, takve ličnosti. Moj savjet je – nastojte vidjeti što šire. Inteliktualna znatiželja je dobar put da se možete prilagoditi mnogim novim stvarima. Danas se puno govori o četvrtoj industrijskoj revoluciji, što smatram običnom reklamnom floskulom. Pojam revolucionarnog proizvoda mogu jednostavno objasniti na primjeru automobila. Sa samo dva broja i jednim slovom. Najprije nismo imali automobil, to je nula, kad ga imamo, to je jedinica. Koji automobil zaslužuje da kažemo da je revolucionaran? Prvi koji je načinjen! To je revolucija, a sve je ostalo evolucija (slovo n)!

Igor Čatić, profesor emeritus

The experience I have gained by learning craft and working at the Tvornica računskih strojeva (Computing Machines Factory), at that time "Kontakt", and the tool workshop called "Štanca", which belonged to my father, can be divided into two parts. As I attended the grammar school and learned craft simultaneously, I had to pass some exams that were an additional requirement for the technical school. Therefore, my biggest interest used to be, popularly called, the technologies. Some core subjects seemed to be needless at the time, like for example the Thermodynamics. Later I wrote my doctoral thesis on the topic of heat exchange in moulds for injection moulding. It seems that I have gained a view, which rarely anyone has, on the entirety of real life as well as theoretical basis. Therefore I think this experience in working and developing particular moulds and tools has helped me a lot. This experience was also crucial when Professor Pierre Dubois, after my job interview with him and his assistant, offered me to volunteer at his institute in Paris.

In the year of 1987, for the first time in history a product which wasn't casted was manufactured, with stereolithographic technology, in an additive manufacturing process. We have published our results recently, were we have proven that the natural model of that process is formation of sedimentary rocks. Look up to the nature! Additive manufacturing is very present in medicine. The Department of Polymer Manufacturing achieved world results with installation of 3D printed vertebra. This Faculty has always had and still has numerous professors who are truly avant-garde! They were strong personalities with a certain experience. There is a difference between experts and personalities – my mentors, professor Đurašević and Menges, they were true personalities. People who aren't just immersed in their field, but see the big picture, people with integrity. We miss that kind of people today, not just we, but everyone. My advice is – try to look wider, how your work fits in the big picture. Intellectual curiosity is a good way to adapt to new things. People talk today a lot about the 4th industrial revolution, which I perceive as a classical marketing phrase. I can easily explain the term of a revolutionary product on the example of an automobile. With 2 numbers and 1 letter. First, we didn't have an automobile, that's zero, now we have it, that's one. Which automobile deserves to be called revolutionary? The first one ever made! That's revolution, everything else is evolution (the n index)!



Zvonimir Šikić, profesor u mirovini

Uvijek mi je osnova bila neka smjesa prirodnih, društvenih i humanističkih znanosti, preciznije: kako bi prirodne znanosti tu mogle nešto protumačiti, posebno matematika. Kada sam završio PMF, htio sam ostati na faksu. Moje je područje bila matematička logika, a svi ljudi iz matematičke logike bili su – na strojarstvu! To je bio profesor Devidé, ne znam jeste li čuli za njega, pisao je i haiku poeziju. On je zapravo završio građevinu i onda doktorirao matematičku logiku. Uveo je matematičku logiku u Hrvatsku, a onda su tu bili i njegovi prvi doktoranti Luka Krnić, pa Šeper... I tako sam bio na FSB-u 41 godinu. I nisam požalio, dapače. Mogu reći da sam lijepo prošao svoje godine na strojarstvu. Na faksu me često vide s Lili. To je moj prvi pas. Dakle, prvi put u životu sam uzeo psa sa svojih 60 godina. Inače bi bila ovdje pa biste mogli i nju snimiti, ali je baš imala danas zakazanu frizuru.

Humboldtova ideja je bila da je sveučilište riznica znanja, suradnja profesora i studenata koji zajedno rade na općem unapređenju znanja. Sad idemo prema korporativnom sveučilištu kojemu je bitan rezultat, koji je primjenjiv ili bolje – primjenjiv odmah, jer se onda može i novčano realizirati. Ja dajem otvoren pristup svim svojim materijalima i radnim verzijama članaka, osim onih koje mi zabrane neki izdavači. To nije nikad bilo tako, u mojoj se mladosti normalno diseminirala sva produkcija, dapače, izdavači su slali ljudima reprintove kada bi ih pitali. Tada su časopise izdavali npr. matematička društva, logička društva, sada su to preuzeli komercijalni izdavači i oni inzistiraju da na tome zarađuju. Mislim da je komercijalizacija znanstvenih publikacija na ovaj način – katastrofalna. Zna mi se često dogoditi, što nikad nije bio slučaj pred 30 ili 20 godina, da mi kada hoću doći do nekog članka, autor ne dozvoljava pristup. Neki me autori sa svoje web stranice upućuju da kliknem na Francis & Taylor ili North-Holland i tamo kupim njihov članak za 50\$. Mislim, koja je to dostupnost znanosti javnosti?! Ali, velik broj ljudi je vjeran otvorenom pristupu i smatram da je to dobro. Tu nisam usamljen.

Zvonimir Šikić, retired professor

I've always been concerned with a mix of natural sciences, humanities and social sciences, more precisely – with the role that natural sciences and especially mathematics could have in the interpretation of things. When I graduated from the Faculty of Science, I wanted to stay in academia. My area of interest was mathematical logic, and all the experts in mathematical logic were – at FSB! There was Professor Devidé, I don't know if you've heard of him, he also wrote haiku poetry. He actually studied civil engineering and then got a PhD in mathematical logic. He introduced mathematical logic to Croatia, and then there were his first doctoral students Luka Krnić and Šeper... And so I had been at FSB for 41 years. And I didn't regret it, quite the contrary. I can say that the time at FSB was well spent. When I'm at the Faculty, people often see me with Lili. She's my first dog, so the first time I got a dog was when I turned 60. She would've been here ready for you to take a photo of her but today I took her to get a haircut.

Humboldt's idea was that the university is a treasury of knowledge, a collaboration of professors and students who work together on some general advancement of knowledge. Now we've reached the time of corporate universities that value results which are applicable or even better – applicable immediately, because then they can be turned into money. I give open access to all of my materials and preliminary versions of my papers, except for the cases when this is restricted by publishers. That's never been the case before, academic production had been normally disseminated during my youth, publishers sent reprints to people when they asked for them. At that time journals were published by, for example, mathematical societies, logical societies, and now publishing is taken over by commercial publishers and they insist on monetizing it. I think commercialization of scientific publications in this way is – catastrophic. It often happens to me, which was never the case 30 or 20 years ago, that when I want to read an article the author doesn't allow access to it on the website but rather directs me to Francis & Taylor or North-Holland to buy the article for \$50. Where is the open access to science in that?! Still, many people have remained loyal to the idea of open access and I think that's good. I'm not alone here.

**Martin Štefan, student**

Iako sam se i prije natjecao, triatlon sam ozbiljno počeo trenirati tek kad sam došao na Fakultet. Učlanio sam se u klub, dobio trenera i shvatio da je to dobro i da me opušta, pa sad treniram svaki dan. Jednom prilikom, kad su se približavali ispiti iz terme, odlučio sam da nekih tjedan dana neću trenirati kako bih imao vremena za učenje. No, ipak nisam mogel biti na miru! Shvatio sam, tih par sati u kojima nisam učio sam proveo u sobi gledajući YouTube, te sam se kasnije osjećao loše. Pa mogao sam tih par sati izaći, kretati se i otići na trening. Tako mi je trening već prerastao u potrebu, ne mogu samo tako prestati. Naravno da mi se zna dogoditi da se zapitam i na utrci, primjerice kad sam išao na Half Ironman. To je utrka koja se sastoji od 2 km plivanja, 90 km bicikla i 21 km trčanja, sve unutar četiri i pol sata. Vozim i mislim: „Pa stvarno, a kaj je meni ovo trebalo? Idem ja odustati, otići u krčmu... Ovo nema smisla!“ Međutim, organizam očito ima taj neki mehanizam, sličan kao kod žena nakon porođaja, da nakon što iskusi veliku bol, pokuša to zaboraviti. Triatlon je granica moje izdržljivosti, razmišljam kako neću to nikad ponoviti, kako je ovo nešto najteže što sam iskusio. Kad se dan nakon utrke probudim, već tražim koje su nadolazeće utrke. Moj deda je imao radionicu u Virju, mom rodnom mjestu kraj Đurđevca s 13 birtija na 3000 stanovnika. Popravljao je bicikle svim ljudima iz okolice i prikupio pun tavan dijelova i bicikala od kojih je najstariji iz 1930-ih. Ja sam to naslijedio, pa sam zapravo preko bicikala i došao do triatlona, kad je jedan triatlonac kojeg sam upoznao u srednjoj školi vidio potencijal u meni. Otišao sam na prvu utrku i osvojio prvo mjesto u kategoriji. Kasnije su medalje samo padale, a sa 17 godina istrčao sam i prvi maraton.

Martin Štefan, student

Although I've competed before, I started taking triathlon seriously when I enrolled in the Faculty. I joined a club, got a coach and started liking it, it relaxed me and so I started training every day. One time, when the Thermo exams were near, I decided that I won't train for a week, so I could study. But I couldn't stay put! I realized that I spent these few hours of downtime in my room watching YouTube and I felt bad about it later. I could have trained for those few hours. Therefore, the training started to be a part of me, I just can't stop. Of course that sometimes, when racing, I question myself, like this one time I was doing the Half Ironman race. That's a race that consists of 2 km of swimming, 90 km of cycling and 21 km of running, all in four and a half hours. As I was cycling, I was thinking: "Why do I do this? I'm quitting, I'm going to a pub... This makes no sense!" However, the organism clearly has this mechanism similar to a woman after giving birth, that after experiencing a great amount of pain, it tries to forget it. Triathlon is the frontier of my endurance, I think how I'll never do it again, how this is something most difficult I've experienced. However, when I wake up the day after race, I start searching for upcoming races. My grandpa had a workshop in Virje, my home town near Đurđevac with 13 bars per 3000 people. He repaired practically every bicycle in the neighbourhood and gathered a full attic of parts and bicycles, the oldest bicycle being from 1930s. I've inherited it, so in fact, through bicycles I started doing triathlon and then one triathlete who I met in high school saw my potential. I went to my first race and won the first place in the category. Later on, medals just lined up, and when I was 17 years old I completed my first marathon.

**Tomislav Mešinović, alumnus**

Godine 2000. sam upisao zrakoplovstvo, tada je to bio potpuno novi studij. Kad gledam u retrospektivi, ne znam kako sam to sve prošao – tih 64 ispita. Imao sam sreću da mi je mentor na diplomskom bio profesor Terze. Čak je i sudio da godinu dana tadašnjeg vojnog roka odradim na faksu, a ne na terenu. Zbog njega sam naučio dosta stvari koje, da sam bio kod nekog drugog, ne bih jer me on gurao naprijed. Kada sam radio diplomski trebao sam izmodelirati zrakoplov na bazi Airbusa A319 i A320 s kojim Croatia Airlines leti. Dobili smo dokumentaciju od Croatia Airlinesa, no u toj dokumentaciji nisi imao osnovne dimenzije – širina krila, kutevi... Terze nam je rekao da odemo u Croatia Airlines za vrijeme remonta zrakoplova i da sami izmjerimo. Došli smo u 11 sati navečer na pregled, nas trojica, s laserskim mjeračem udaljenosti. Penjali smo se po krilu i mjerili sve relevantne dimenzije. Malo smo se i šepurili govoreći: „Mi inženjeri dolazimo, ne?“ Majstori tamo su nas gledali i pitali: „Koji su sad pak ovi?!“ Puno sam putovao na faksu i ekipa je bila dobra. Sviđa mi se ideja da se njeguje zajednica sadašnjih i bivših studenata i profesora – iz toga može samo nešto pozitivno izaći. Mislim da bi se trebali ugledati na fakultete koji imaju jake alumni klubove. Kad završimo neki faks trebali bi se time hvaliti, biti ponosni na svoje sveučilište, imati zajednicu s kojom ostajemo u kontaktu.

Tomislav Mešinović, alumnus

I started studying Aeronautical Engineering in 2000, back then it was a completely new study program. When I look back, I don't know how I got through it all – the 64 exams. I was fortunate that my mentor was Professor Terze. He even arranged that I perform my, then compulsory, military service at the Faculty, not in the field. Because of him, I learned a lot of things that I otherwise wouldn't, because he pushed me forward. When I was working on my graduate thesis I had to model an airplane based on Airbus A319 and A320 which Croatia Airlines flew. We got the documentation from Croatia Airlines, but without the basic dimensions – wing span, angles... Terze told us to go to Croatia Airlines during the overhaul of the aircraft and to measure it ourselves. We arrived at 11 p.m., the three of us, with a laser distance meter. We crawled on the wing and measured all the relevant dimensions. We were even showing off a bit saying: "The engineers are approaching." The technicians were watching us and asked, "Who are these people?!" I travelled a lot while in college and the crew was good. I like the idea of fostering a sense of community between current and former students and professors – only positive things can come out of it. I think we should look up to faculties that have strong alumni clubs. When we finish college we should praise it, be proud of our university, have a community to stay in contact with.



Karlo Repar, alumnus

Bio sam u Istanbulu na IAESTE praksi. Kad sam došao, imao sam problema s prijevozom jer sam bio smješten na europskoj strani, a radio na azijskoj. Podzemnom željeznicom prolazio sam ispod Bospora, a trebalo mi je otprilike dva sata do posla. Vraćao bih se doma najranije u ponoć, a ujutro se dizao u 6. Još je bio i ramazan, pa me budio pjev hodže po noći. Prvi smještaj imao sam u domu s jednim Nijemcem i Slovakom. Sobica, 3 kreveta, ne možeš se pomaknuti, ja sam brutalno neispavan i Slovak mjesečari. Našao sam onda drugi smještaj u Beškitašu. Mogao sam duže odspavati i to mi je bio najdraži kvart. Sadržaji, svirke, restorani, kafići, živi se cijelu noć. Tamo sam živio s dva Kurda. Oni su bili super, išli smo na cugu svako malo. Ujutro sam putovao brodom. Fino ti sunce izlazi, ti gledaš i uživaš, a ukupno sam putovao sat vremena kraće.

Igrom slučaja sam drugi dan nakon dolaska u Istanbul završio na njihovom prvom Gay Pride-u. Išao sam u centar s mentorom da mi pokaže grad. Gledao centar, sve divno krasno, lijepo vrijeme, pušili nargilu. Nakon 20 minuta niotkuda dolazi policija, sa suzavcima, palicama i počinje stamperdo. I šta ćeš ti reći sad, ne dirajte me, na praksi sam ovdje? Ne, trčat ćeš u stamperdu i moliti Boga da te ne istuku. Sklonili smo se u neki restoran, i opet zapušili nargilu. Mislio sam da neću moći do sutra izaći. Skrivali smo se oko 7 sati, no suzavac sam samo dvaput dobio u oči. Nažalost, ljudi su skloni pripadnike različitih kultura i vjeroispovijesti nazivati pogrdnim imenima, a nitko tko je drugačiji nam ne valja. Shvatio sam koliko smo slični kao ljudi bez obzira na kulturu i vjeru te kako su predrasude bedastoća.

Prije 15-ak godina pokrenuli smo obiteljski posao, proizvodnju zdrave hrane. Naslijedili smo pradjedovo imanje blizu Jastrebarskog koje je bilo u oronulom stanju. On ga je bio kupio od plemića Erdődyja. Htio bih još malo vidjeti svijeta, a onda želim postati nezavisan čovjek. Ne valja zaboraviti svoju zemlju, jer čim nemaš svoju hranu, nemaš svoju energiju, ti si ovisan. Kad imaš zemlju, imaš sebe, manji su ti troškovi... Više se naradiš, ali radiš za sebe, a to je najbitnije.

Karlo Repar, alumnus

I took an IAESTE student internship in Istanbul. When I first arrived, I had problems with public transportation as I was situated in the European part but worked in the Asian part of the city. I used to ride the subway beneath Bosphorus and it took me approximately two hours to get to my workplace. I'd return home at midnight and wake up at 6 a.m. Ramadan was also going on, so khwaja's song used to wake me up through the night. My first accommodation was in a dorm with a German and a Slovak. A small room, 3 beds, you can't turn around, I'm brutally sleep deprived and the Slovak is sleepwalking. Then I found another accommodation in Beşiktaş. I could sleep longer and that was my favorite neighborhood. Leisure pursuits, live music, restaurants, cafes, nightlife... I lived there with two Kurds. They were great people, we hung out often. I used to travel by boat in the morning. The sun is raising, you just watch and enjoy. My commute was an hour shorter.

The second day in Istanbul I ran into their first gay pride. My mentor and I went to the center so he could show me around the city. I looked around the center, everything's pretty and nice, good weather, we smoked narghile. 20 minutes later, the police came out of nowhere, with tear gas and batons, and suddenly there was a stamperdo. So what to do? Could I try saying not to touch me because I'm just a trainee? I don't think so. I could only run, praying not to be beaten up. We took a shelter in a restaurant, and smoked narghile again. We remained hidden for about 7 hours, for I was tear gassed twice. Unfortunately, people are often abusive towards diverse cultures and religions, and there is some hatred against anyone different. I found out that humans are similar no matter what culture or religion they are, and that is why I find prejudices stupid.

15 years ago, we started a family business, production of healthy food. We inherited a property near Jastrebarsko that belonged to my great grandfather. He bought this land from count Erdődy and it was very dilapidated when we took it over. I would like to see more of the world, and then become independent. Forgetting your land is bad, for when you don't produce your own food, you don't have your own energy, you become dependent. When you own a fertile land, you own yourself, your expenses are low... Harder work is required, but you work for yourself, and that is most important.

**Iva Kresnik, studentica**

Užasno mi je da moram odabrati jednu stvar. Da radim 10 000 poslova prije nego što umrem – to zvuči super. Recimo, da sam 2 godine instruktor surfanja, 1 godinu instruktor boardanja, onda da radim kao strojar, pa sudjelujem na znanstvenim radovima, pa upišem još jedan faks, pa napišem knjigu, pa napišem par blogova – nešto politički... Da baš ne bude sve zabava... Nemam megalomanske planove, iako sam se zezala kad sam upisivala strojarstvo da ću sad napraviti robote koji će pokoriti svijet. Onda je moja frendica bila oduševljena i rekla: „Sve ćemo pokoriti i napraviti harem!“ I onda sam joj rekla: „Ne, Nina, nećemo.“ Nitko nije strojar u porodici, ali odrasla sam gledajući Zvezdane ratove i Zvezdane staze s mamom. Svemir mi je uvijek bio wow tema, a u Svemiru si ili pilot ili strojar na brodu tako da sam ja odabrala biti strojar! Volim tehnologiju, ali me istovremeno i užasava. Plaši me kaj sve može proizaći iz tehnologije, jer su neki ljudi zločesti. Znaš, padne ti neka fora na pamet kaj bi mogao dizajnirati i onda ti u jednom trenutku sine: „Ajme ne, netko bi to mogao zloupotrijebiti.“ Ja sam istovremeno tehnološki skeptik. Fora su stvari koje trenutno razvijamo, ali bi cijela Zemlja morala biti na određenom razini svijesti da bismo mi mogli razvijati takvu tehnologiju. Ovako samo radimo veće nejednakosti i probleme. Ima ljudi koji još uvijek ne znaju pisati, a mi već razmišljamo o novim planetima. Mislim da bismo trebali izjednačiti Zemlju, da svi budemo na otprilike istom nivou i imamo iste šanse. E, onda se možemo zezati s mobitelima, satelitima i umjetnom inteligencijom. Koliko god je umjetna inteligencija fora!

Iva Kresnik, student

I don't like being forced into choosing one thing. To have 10,000 jobs before I die – that sounds great. So let's say – to be a surfing instructor for 2 years, a boarding instructor for 1 year, then to work as a mechanical engineer, to write scientific papers, after that to attend a second faculty, write a book and write a couple of blog posts – something political... So that not all is fun and games... I don't have megalomaniac plans for the future, though I used to kid around when I started studying mechanical engineering that I would now make robots that would conquer the world. My friend was delighted and said, "We will conquer them all and build a harem!" And then I told her, "No, Nina, we will not." There are no mechanical engineers in my family, but I grew up watching Star Wars and Star Trek with my mom. The Universe has always been a thrilling topic for me and there you can be a pilot or a mechanical engineer on the ship, so I chose to be a mechanical engineer! I love technology but at the same time I'm terrified of it. It scares me to think of everything that can come out of technology, because some people are nasty. You come up with an interesting idea and at one point you realize, "Oh no, someone could misuse this." So I'm also a technological skeptic. The things we are currently developing are interesting, but the whole Earth must reach a certain level of consciousness in order for us to develop such technology. In this way we only produce bigger inequalities and problems. There are still people who can't write and we are already thinking of new planets. I think we should balance the Earth so that all of us are at about the same level and have equal opportunities. Then we can play around with cell phones, satellites and artificial intelligence. Although artificial intelligence is quite cool!



Borna Škrlec, student

Kad sam u srednjoj švrljao Internetom, naletio sam na zanimljiv događaj: Svjetsko kvizaško prvenstvo. Rekao sam si: „Ajde da pokušam!“. Završio sam najbolji u Hrvatskoj, a 9. u svijetu od negdje 660 ljudi u juniorskoj kategoriji. Upoznao sam i neke ljude koji su mi rekli da imam potencijala i savjetovali da češće idem na kvizove. Čim sam napunio 18, poslao sam prijavu na popularni TV kviz *Potjera*. Bila je ljetna stanka i u međuvremenu sam postao juniorski državni prvak u individualnim kvizovima, gdje dobiješ 100 pitanja, pa riješiš koliko možeš. Do sad sam na *Potjeri* bio dva puta i bilo je jako napeto, a sad brojim dane da se prijavim na sljedeću. Rekao bih da je počelo sa srednjoškolskim natjecanjima iz povijesti. Povijest me zanima, no ljubav prema povijesti prerasla je u ljubav prema natjecanju. Kasnije mi više nije bilo bitno da naučim povijest, već da ganjam prvo mjesto u državi. Nije čudno što sam zavolio povijest. Dobio sam ime po knezu, a braća su mi Mislav i Domagoj, tako da se svi zovemo po knezovima.

Kako sam išao i na pub kvizove, lovac iz kviza Dean Kotiga prepoznao me i dao mi savjete o tome koji su kvizovi dobri i slično. Počeo sam sve više i više ići na kvizove, upoznao sam sve više ljudi iz kvizaškog svijeta, uglavnom ista lica, velike znalce. Stvarno mi je to zanimljivo, ali nema nekog posebnog recepta za pripremu. Volim gledati serije i filmove, čitati romane, slušati glazbu, pratiti sportske događaje. Trudim se da filmovi koje pogledam budu dobri, zanimljivi i nekonvencionalni. Posebno su mi dragi strani filmovi, oni koji možda nisu toliko aktualni, ponekad crno-bijeli. Trenutno imam popis od stotinjak filmova koje želim pogledati. Glazba mi prije nije bila toliko bitna, ali otkako sam počeo živjeti sam, ne mogu zamisliti život bez slušanja glazbe. Ono najvažnije za mene je kompetitivnost. Rečenica osnivača olimpijskih igara, Pierrea De Coubertina, „Važno je sudjelovati.“, diže mi tlak jer nastojim uvijek dati sve od sebe i pobijediti ako je moguće. Stvari koje su mi bitne pokušavam napraviti najbolje što mogu. Primjerice, kad crtam šrafuru na tehničkom crtežu toliko dugo brišem dok svaka crta nije savršeno ravna. Cilj kviza za mene je sličan onome u životu, odgovoriti točno na što više pitanja.

Borna Škrlec, student

When I was still in high school, while wandering the Internet, I stumbled across an interesting event: World Quizzing Championship. I said to myself: "I'm trying this!" I finished first in Croatia and 9th in the world, with 660 people competing in the junior category. I also met some people who said that I have some potential and suggested that I should go quizzing more often. After my 18th birthday, I sent an application for the TV show *Potjera* (The Chase). It was summer vacation and in the meantime I was the junior state champion in individual quizzes, where you get 100 questions and you answer as much as you know. I was two times in *Potjera* and it was very tense. Now I'm counting days till the next show. I'd say it all began with high school history competitions. History is interesting, but my love for history turned into love for competition. Later it wasn't important anymore to learn history, but to run for the first place in the state. It isn't strange that I love history. I was named after a Croatian duke just like my brothers Mislav and Domagoj, so we call ourselves 'dukes'.

As I was participating also in pub quizzes, Dean Kotiga, the *Potjera* hunter, recognized me and gave me advice about quizzes. I met a lot of people from the world of quizzes, mostly the same familiar faces who have great knowledge. I find quizzing interesting, although there is no recipe on how to prepare. I enjoy watching movies and series, reading novels, listening to music, keeping track of some sport events. I try to watch films that are good, interesting and unconventional. I love foreign films the most, older ones, sometimes black and white. At the moment, there are about a hundred movies on my watchlist. I used to find music not that important, but since I started to live alone I cannot imagine my life without listening to music. For me, competitiveness is most important. The famous sentence by the founder of the Olympics, Pierre de Coubertin: "The most important thing is not winning but taking part" constantly annoys me, because I always give my best in order to win if there is a slightest possibility. I strive to do all the things I find important in the best way possible. For example, when making cross-hatching on a technical drawing, I erase the lines as long as they are not perfectly straight. The goal of the quiz is similar to the one in life, to answer as many questions as you can correctly.

**Marin Vukovojac, student**

Dan je baš veselo počeo. Počeo sam hodati iz zadnjeg dijela autobusa i baš je odjednom vozač naglo zakočio! I ja sam pol' busa preletio, s laptopom od dosta kila, i na kraju se zaustavio prsima. Tamo je neka gospođa bila na sjedalu, skoro sam odnio i nju i sjedalo! Ljudi gledaju, ja se ispričavam gospođi i izlazim van. Nešto sam prije malo skejtao pa te spoznaje koristim u busu kad ovaj koči i kreće, pa tako i ja nogama prebacujem težinu. Ovaj put nije pomoglo. Svakakve vještine zatrebaju u velegradu! Ali sve je to jednostavnije od objašnjavanja kad me doma pitaju: „A koja si ti sad godina?“ No, završni rad je već riješen, i u njemu sam spojio dva svijeta koja volim – glazbu i strojarstvo. Napravio sam kompletnu mehaniku i rastav sila jednog dijela električne gitare – vibrata ili kolokvijalno rečeno tremola. Kad sam dolazio do profesora predložiti temu, na razgovor sam ponio električnu gitaru, čisto da bude uvjerljivije! Počeo sam svirati u osnovnoj školi. Tad su neke druge stvari bile popularne – slušali su se Eminem i 50 Cent, svi smo nosili široke hlače i Yankee majice, neki su bili toliko ekstremni pa su kao Nelly furali flastere na licu bez razloga. Ja sam se bazirao na 70-ima, 80-ima i ranim 90-ima. Whitesnake, Scorpions, Europe, Deep Purple, svašta se nađe za mene. Tako da moram zahvaliti starcima što još uvijek trpe taj glasni rock-and-roll i što me još uvijek nisu potjerali van iz kuće.

Marin Vukovojac, student

The day began so cheerfully. I started walking from the back part of the bus and the driver suddenly hit the brakes! I flew across half of the bus, holding a heavy laptop, and finally landed on my chest. There was a lady in her seat, I almost took her and her seat with me! People watched, I apologized to the lady and went out. I used to skateboard so I'm using the skateboarding principles during bus rides. When the driver hits the brakes and starts moving again I balance the weight with my legs. It didn't help this time. You need all kinds of skills to survive in a big city! But all of that is simpler than the explaining I have to go through when my parents ask me, "So what year are you in now?" But I have already finished my undergraduate thesis, in which I connected the two worlds I love– music and engineering. I did the complete mechanics and free-body diagrams for one component of the electric guitar – the whammy bar or colloquially called the tremolo bar. When I went to see my professor to propose the thesis topic I brought also my electric guitar just to be more convincing! I started playing in elementary school. Some other stuff were popular back then – people listened to Eminem and 50 Cent, we all wore wide pants and Yankee shirts, some went to the extreme of putting plasters on their faces for no reason, like Nelly did. My music taste is based on the 70s, 80s, and the early 90s. Whitesnake, Scorpions, Europe, Deep Purple, lots of names come to mind. So I have to thank my parents for suffering the reign of loud rock and roll. And for not kicking me out of the house yet.



Petra Adamović, studentica

Inače se jako volim baviti crtanjem i slikanjem, meni je to super i crtam otkad sam bila mala. Crtala sam i po kafićima, a radila sam i portrete. Ako pogledam datume svojih slika, vidim da su obično u vrijeme rokova jer je to moj način oslobađanja od nervoze. No, nikad nisam htjela samo crtati ni naplaćivati nešto što radim iz gušta. Zato mislim da sam pogodila faks, jer sam spojila ugodno s korisnim. Zato sam i odabrala konstrukcijski smjer. U jednoj ruci mi je kist, a u drugoj šubler. Pokušavam spojiti strojarstvo s umjetnošću. Kad sam gledala film *Interstellar*, nije bilo ničega što mi se nije svidjelo, ali najviše me fasciniralo koliko je strojarstvo neophodno da se snimi takav film. Sviđa mi se što se strojarstvo petlja u sve, doslovno u sve. Volim stvarati i po prirodi sam isto takva da se petljam u sve i sve me zanima. Ali ne volim kad se stvari ofrlje naprave, jako često se dogodi da nisam zadovoljna rezultatom te pokušavam sve napraviti najbolje moguće.

U FSB Racing Team sam došla slučajno, preko prijatelja, a mislim da mi je rad u timu puno dao, koliko god me izmorio. Probudilo mi se samopouzdanje, jer sa znanjem koje stekneš neuspjesima, ono raste. Shvatila sam koliko je bitan smisao tima i da je ključ njegovog funkcioniranja u kompromisima. Ljudi ne shvaćaju da je moguće nekog istovremeno poštovati i ne slagati se s njime. Usput sam i puno naučila. Tata, koji zna puno o autima, stalno me ispitivao o dijelovima: „Pa kak to ne znaš, kaj vas uče na tom faksu?“. A onda je počelo i sklapanje formule, pa sam se prestrašila čuvši kako dečki izgovaraju tada nepoznate mi pojmove poput spone i manžete. Tad sam počela sve više dolaziti u garažu da i to naučim, i to u tolikoj mjeri da sam jednom prilikom propustila otići na more. Volim organizirati stvari, ali nemam velikih planova jer ću na vrijeme znati što je najbolje za mene, taj osjećaj me još nikad nije izdao. Nadam se da će to potrajati.

Petra Adamović, student

I like drawing and painting, it's just awesome to me. I've been drawing since I was a kid. I used to draw portraits and wall drawings in cafes. My works are usually drawn during exams because drawing relaxes me. But I've never wanted my main occupation to be drawing nor charging money for something I do for fun. That's why I think I've chosen the best faculty because I am able to do the two things I enjoy the most. That's also the reason I chose Engineering Design as my course. I hold a paintbrush in one hand, and a calliper in the other. I try to connect mechanical engineering with art. When I was watching the film *Interstellar*, there was nothing I didn't like, and I was fascinated how much mechanical engineering is needed to shoot such a movie. I like the fact that mechanical engineering is literally everywhere. I am nosy and interested in everything and I love to create things. But I don't like when things are made superficially. It often happens that I'm not satisfied with the result and I try to do everything the best I can.

I came to the FSB Racing team by accident, through a friend. I think that team work gave me a lot but it also tired me out. It made me confident, because with the knowledge you gain from failures, the confidence grows. I realized the importance of a team work and that compromises are crucial for its functioning. People don't understand that you can respect someone, while not necessarily agree with him. I've also learnt a lot. My dad, with respectable knowledge for cars, always used to ask me about car parts: „Why don't you know that? What are they teaching you at the Faculty?“. And then the team started assembling a car, and it scared me hearing all those words I wasn't familiar with, like clamps and CV boots. In order to learn that too, I frequently started visiting the garage to such an extent I once even decided not to go to the seaside and work on a car instead. I like to organize things, but I don't have big plans because I'll know in time what's best for me. That feeling has never betrayed me yet. I hope it will last.

**Ahmed Abdalla, student**

Tata mi je iz Sudana došao u Zagreb studirati politologiju za vrijeme Pokreta nesvrstanih, a mama je iz Bihaća. Oduvijek me bilo „na sve strane“ jer mislim da svaka aktivnost kojom se bavim daje vrijednost mom vremenu. Dvije godine sam predsjednik ESTIEM-a, tri godine u zboru, šest godina plešem swing, osam godina sam trenirao ragbi... Ako si konstantno u tom nekom „flowu“ onda ne gledaš na nove obaveze kao na udarce iz vedra neba, nego si cijelo vrijeme u ritmu. Prošlog ljeta održavao se Zagreb Classic festival na otvorenom. Pjevao sam, zajedno s još stotinu ljudi iz Akademskog zbora Ivan Goran Kovačić, ispred Umjetničkog paviljona – „žute zgrade“ na Tomislavcu. Izvodili smo Carminu Buranu. Ljudi je bilo na tisuće, sve je bilo puno od pozornice ispred „žute zgrade“, do Glavnog kolodvora. Inače smo jako glasni, ali su nam rekli da zato što je to velik prostor, trebamo dodatno ozvučenje. Onda nas je ozvučenje zeznulo jer smo previdjeli jedan mali detalj – zgradu Glavnog kolodvora. Kad smo pjevali, ona nam je vraćala jeku! Čulo se preklapanje jako puno glasova. Ali, pjevali smo Carminu već „sto puta“ i odlično je prošlo... Inače, ne znam jeste li ikada čuli za Misu Marulianu, vjerojatno niste, vjerojatno se neće izvoditi ni idućih petnaest godina kao ni dosad, ali to djelo je genijalno. Nađite na YouTube-u i slušajte te stvari. Klasična glazba, hrvatska glazba – nepoznata, ali meni je otvorila oči i toliko je dobro skovana, da mi je to jedno od najdražih djela. Čak draže i od Beethovena i Mozarta.

Ahmed Abdalla, student

My dad came to Zagreb from Sudan to study at the Faculty of Political Sciences during the Non-Aligned Movement, and my mom is from Bihać, Bosnia and Herzegovina. I've always been „all over the place“ because I think that every activity I take part in adds value to my time. I've been the President of ESTIEM for two years, singing in a choir for three years, swing dancing for six years, and I played rugby for eight years... If you are constantly in the flow, you don't perceive new obligations as bolts out of the blue, but rather as part of your natural rhythm. Zagreb Classic Festival, an open air festival, was held last summer. I was singing, together with a hundred people from the Ivan Goran Kovačić Academic Choir, in front of the Art Pavilion – “the yellow building” in King Tomislav Square (Tomislavac). We performed Carmina Burana. There were thousands of people there, all the way from the stage in front of “the yellow building” to the Main Railway Station (Glavni kolodvor). We are normally very loud, but they told us that since that was a big open space we needed some extra sound systems. Those sound systems tricked us in the end because we overlooked one small detail – the Main Railway Station building. When we were singing, it was producing an echo! One could hear a series of overlapping voices. But we had sung Carmina Burana “a hundred times”, so it all went well in the end... Anyway, I don't know if you have ever heard of the Maruliana Mass. You probably didn't and it probably won't be performed in the next fifteen years, since that's the way it has been so far, but this piece is brilliant. Search for it on YouTube and listen to it. Classical music, Croatian classical music – quite unknown, but it was an eye-opener. Because it is written so well, it's one of my favorite pieces. I like it even better than Beethoven and Mozart.



Kristijan Džamonja, student

U osnovnoj školi krenuo sam na natjecanja iz robotike. Najbolje rezultate postizao sam na ekipnom međunarodnom natjecanju RoboCup diljem Europe, Nizozemskoj pa čak i Meksiku. Imao sam prilike upoznati zanimljive kulture i ljude, ali i opeći se na jako ljutu meksičku papriku. Što se tiče robotike, puno mi je pomogao moj otac koji mi je između ostalog omogućio kućnu arenu i robota od komponenti koje sam sam modificirao. To mi je pomoglo više od bilo čega da naučim programirati. Godinu dana bio sam na elektrotehnici na Tehničkom veleučilištu u Zagrebu, ali nakon što sam riješio sve u roku htio sam nešto drugo. Igrom slučaja završio sam na brodogradnji što mi je očito bilo suđeno još od kad sam kao mali skakao po brodovima u Sv. Filipu i Jakovu. Imao sam gdje naučiti i o poduzetništvu, jer mi roditelji imaju privatnu firmu, tako da se razumijem u osnovne stvari od knjigovodstva i prodaje do primanja i davanja. Shvatio sam koliko je novac bitan kad sam radio na slušalici za telefonsku kompaniju, primijetivši da na moru za svoju satnicu ne mogu popiti niti čašu limunade. Uz dobru potporu roditelja došao sam tu gdje jesam. Sad je ideja spojiti programiranje i brodogradnju, a tu se držim principa da prvo treba shvatiti što ljudima treba, a zatim im olakšati posao softverom. Ako sa svim stečenim papirima i znanjem dođem na dobru poziciju, želim ostati u Hrvatskoj. Želja mi je ovdje jednog dana omogućiti svojoj obitelji sve što treba, ali volio bih steći znanje koje će netko znati cijeniti.

Kristijan Džamonja, student

I started competing in robotics when I was in the primary school. I achieved the best results in international team competitions known as RoboCup all across Europe, in Netherlands and even Mexico. I got the chance to meet interesting people and cultures, but also got burned by super-hot Mexican chili pepper. As far as robotics is concerned, my father helped me a lot by enabling me, among other things, to build my own home arena and a robot made out of components I modified. It helped me learn programming more than it could be learned from any practice exercises at school. I studied electrical engineering at Zagreb University of Applied Sciences, but having passed all of the exams I realized I wanted something different. Almost by accident, I ended up studying naval architecture, which turned out destined since as a kind I used to jump around ships in the seaside town of Sv. Filip i Jakov. Thanks to my parents who own a company, I was given the opportunity to learn about entrepreneurship. So, I have learned the basics of bookkeeping, sales and handling receipts and dispatches. I became aware of the real value of money when I worked in a telecom call center and realized that my hourly rate wouldn't cover even a glass of lemonade at the seaside. With the huge support of my parents I've made it to this point. Now I wish to combine programming and naval engineering skills, since my basic principle when programming is to focus on people's needs, and then provide them with adequate software to make work easier. If I manage to get a good job based on all acquired qualifications and knowledge, I wish to stay in Croatia. I've made it my aim someday to provide my family with everything they need, and I would like to acquire knowledge that would be appreciated.



Davor Stjelja, bivši student

Još za vrijeme studija našao sam praksu u Finskoj, a nakon diplome su me djevojka i posao zadržali tamo. Bavim se digitalizacijom sektora zgradarstva. Zgrade su se prije 100 godina radile gotovo isto kao i danas, pa je to jedna od industrija koja se otad nije baš puno promijenila. Izbor termotehnike doveo me do posla savjetovanja vezanog uz toplinske sustave zgrada. S obzirom na resurse i zahtjeve koristim digitalne alate s 3D modelima. Primjerice, pritiskom na prozor takvog modela zgrade saznajem koji je to tip prozora i sve podatke o njemu. Pomoću softvera za održavanje zgrada prijavljuju se i najsitniji kvarovi u tom sustavu, makar i kad samo negdje pregori žarulja.

Finci puno više planiraju nego Hrvati. Kod njih je sve toliko dobro organizirano da se možeš samo prepustiti takvom sustavu. Kod nas je sve spontanije, brzo se dogovoriš za kavu. Tamo sam dogovor za kavu zna biti i do 4 tjedna ranije, a za slavlje diplomiranja javljaju i po 3 mjeseca unaprijed. Kad kod kuće radim zabavu, samo pozovem prijatelje da dođu piti i jesti, dok u Finskoj rade prave tematske zabave koje se sastoje od pomno planiranih večera i kodeksa odijevanja. Ljudi bolje iskoriste vrijeme, ne vise na kavama cijelo vrijeme i zato imaju milijun najrazličitijih hobija. Zbog toga na prvu i nisu toliko pristupačni, malo su hladniji, pa treba i više vremena da probiješ led s njima. Kažu da ti trebaju godine da te Finac prestane gledati kao nekog tamo prolaznika i postane ti prijatelj, no on ti nakon toga zaista bude pravi prijatelj. Imam jako dobru prijateljicu koja podučava djecu jezicima. Srpkinja je, a podučava ih i srpski i bosanski i hrvatski. Ponekad me pita kaže li se riječ ovako ili onako na hrvatskom, a kad me tako direktno pita isprva nisam ni ja siguran. Kad si u dalekoj zemlji s drugačijom kulturom, smanjuju se i razlike između naših balkanskih susjeda.

Davor Stjelja, alumnus

During my studies, I went to Finland to carry out an internship, and then upon graduation I stayed there because of my girlfriend and a job. My area of work is digitalization in the building and construction sector. A hundred years ago buildings were built almost the same way they are built today, so that the industry hasn't changed a lot since then. Thanks to the specialization in thermal engineering I landed myself a consulting job in heating systems of buildings. Regarding the resources and requirements, I use digital tools including 3D models. For example, when you click on a window of a building model you find which window type is used and all other relevant characteristics. Using the building maintenance software we can report the most innocent malfunction in the system. Even when a light bulb has burned out somewhere.

Finns plan a lot more than Croats. Everything is well organized so you can just relax in the state system. In Croatia, everything is spontaneous, you arrange a coffee meeting fast. In Finland, a coffee meeting is set up 4 weeks in advance and a graduation party even 3 months in advance. When I plan a party at home, I simply invite friends over for a drink and something to eat, while Finns put in big effort in planning some theme parties which consist of delicious dishes and a dress code. Finnish people spend time wisely, they don't waste time in cafés and that is why they all have many diverse hobbies. This is also why they aren't very approachable, they seem to be cold and it takes time to break the ice. I've heard that it takes a couple of years for a Finn to stop looking at you as some passerby and make friends with you, and when this happens he or she really is a true friend. I have a close friend who teaches children languages. She is a Serb, but apart from Serbian she also teaches the Bosnian and the Croatian language. Sometimes she asks me about the difference between some words in Croatian, and I don't always know the answer when she asks me in such a direct way. In a distant country with a different culture like Finland, differences between Balkan neighbors are diminishing.



Miho Klaić, asistent

Završio sam proizvodno inženjerstvo, obradne sustave. Moja priča sa Zagrebom počinje od moje 14. godine, a s tehnikom i puno prije jer u Dubrovniku imamo obiteljsku tvrtku za obradu kamena. Po pogonu sam se vrtio i kao mali, ne smijem vam ni reći koliko sam imao godina. I tako sam jedno popodne kad sam bio u fazi biranja srednje škole, vidio na televiziji da se u Klaićevoj ulici, u Prvoj tehničkoj školi „Tesla“, otvorio Centar za nove tehnologije i da je uloženo dva milijuna ondašnjih maraka. Sjeli smo u auto i krenuli za Zagreb. Imao sam 14 godina, ugledao te CNC strojeve i od tada sam zaljubljen... Odmah smo povukli papire iz Dubrovnika. Sredili smo smještaj u Učeničkom domu „Tin Ujević“ u Dubravi. To vam je isto bila priča za sebe, vrhunski dom za 250 ljudi, prosječna ocjena doma je bila 4,56. Dakle, svi su prolazili s pet. Tamo je bila prava atmosfera – radna, prijateljska, družili bi se, zafrkavali – tako da mi je kroz srednju školu bilo odlično. Ekipa me dobro prihvatila, ipak sam bio jedini Dalmatinac u razredu! Nakon Tesle je prirodni izbor bio FSB, i naravno, nastavak priče s CNC strojevima.

Na FSB-u sam prve i druge godine, moram priznati, bio nečujan. Nisam se nekako izdvajao, ali sam pokazao interes za ovaj naš dio. Kad sam bio treća godina faksa imali smo kod mojih u Dubrovniku modernizaciju pogona. Svaka dva tjedna sam bio u Dubrovniku. Petkom navečer bih išao u Dubrovnik, subotu i nedjelju smo radili – kompletno sve mijenjali, montirali, švasali. Onda bih prema Zagrebu išao nedjeljom u 1–2 u noći i u ponedjeljak ujutro bio na predavanju. Možete misliti kako sam bio dobre volje ponedjeljkom ujutro. U svakom slučaju počeo sam se intenzivnije baviti svojim budućim diplomskim radom koji je bio petoosni stroj za obradu kamena. Onda me kolega Staroveški pitao: „Bi li ti htio ostati tu na faksu?“ A ja sam vam do tada gledao isključivo kako ću taj fakultet završiti i ići doma, čekao me biznis i sve. Malo pomalo i meni je bilo glupo sve to pustiti. Sad kad gledam, lako mi je imati poletnu energiju kad imam stvarno dobar motor iza sebe, svoje kolege i sinergiju s drugim poljima. Gdje god se okrenem, na koju god stranu pogledam – vidim stvari koje čovjeka ispunjavaju od jutra do mraka!

Miho Klaić, teaching assistant

I graduated in production engineering, machining systems. My story of us, Zagreb and me, started when I was 14 years old, and the one of engineering and me even earlier – since my family owns a stone processing company in Dubrovnik. I've been around machines since I was a kid, I shouldn't tell you how young I was then. So one afternoon, when I was trying to choose a high school for me, I saw on television that a Center for New Technologies had been opened at the First Technical School 'Tesla' in Klaićeva Street in Zagreb. Two million German marks had been invested in it. We sat in the car and headed for Zagreb. I was 14 when I saw those CNC machines. Ever since then I've been in love... We had all my documents sent to us from Dubrovnik right away. We found accommodation for me in Tin Ujević student hall of residence in Dubrava. That hall was a special story, being a home to 250 people with the average GPA of 4.56. It means that all of us passed our exams with excellent grades. The atmosphere was fantastic, friendly and the one of hard work. We spent a lot of time together having fun. So I can say that I had a great time in high school. The students welcomed me in their team, after all I was the only Dalmatian in the class! After graduating from Tesla, the natural choice for me was FSB and, of course, the CNC machine story continued.

I have to say that I was very quiet during the first two years at FSB. I didn't stand out from the crowd but I showed interest in the areas I had previously mentioned. When I was in my third year, my family back in Dubrovnik was going through a complete modernization of the facilities. I was in Dubrovnik once every two weeks. On Friday evenings I would go to Dubrovnik. On Saturdays and Sundays we worked – replacing old parts, assembling, welding... Then on Sundays I would go back to Zagreb at 1–2 a.m. and was at the lectures on Monday mornings. You can imagine how cheerful I was on those Monday mornings. Anyway, I started to work more intensively on my future master's thesis, which was about a five-axis stone processing machine. At that time my colleague Staroveški asked me, 'Would you like to stay in academia?' All I wanted was to finish my studies and return home. There was business, and not only business, waiting for me at home. However, little by little, I started realizing that it would be foolish to let it all go. Looking back, it's easy to be enthusiastic when I have such a good 'engine' behind me – my colleagues and synergy with other fields. Wherever I turn, whatever I look at, I see the things that can occupy me from morning to night!



Matija Uremović, student

Mislim da sam, osim što jedini studiram strojarstvo, po svom karakteru također crna ovca u obitelji. Puno sam otvoreniji od članova svoje obitelji te sam ja onaj koji stalno želi upoznavati ljude. Puno me ljudi zna jer sam prilično glasan i na predavanjima, i na hodnicima, pa čak i u menzi. Pitao sam već tete u menzi mogu li doći raditi s njima, ali kako sam već student Fakulteta to nažalost nije bilo moguće. Isto tako, prošli tjedan kad sam bio na Sljemenu, tražila se pomoćna kuharica u restoranu, pa sam se javio premda nisam baš neki kuhar. Ljudi me često krivo shvate, pa me znaju čudno pogledati ili zakolutati očima, ali oni koji me bolje poznaju shvate da sam komunikativan, uvijek dobre volje i da se trudim širiti dobru energiju. Profesori su isprva začuđeni, ali kasnije im postane normalno da se za vrijeme kolokvija moram stalno okretati i pričati. Nije da prepisujem, već meni treba psihološka priprema samo da mogu mirno sjediti tri sata. Jednom prilikom sam čak zamolio profesora da mi na usmenom ispitu pristupi malo ležernije. Odmah se blago nasmijao, naslonio i pitao me koji sam smjer. Na Fakultetu bi se studenti trebali više udruživati, jer sve zna biti previše uštogljeno, a ljudi često ne daju povratnu informaciju, čisto zato jer možda imaju previše posla, ispita i slično. Osim među prijateljima, atmosferu volim podizati i u dvorani, igrajući futsal. Futsal je veoma atraktivan sport, dosta intenzivan, s puno mijenjanja pravca, trčanja, brzih trzaja i slično, zbog čega tijelo često pati. Naravno da mi je, kao i svim sportašima, pobjeda najbitnija stvar, ali najdraži dio mi je dobra interakcija s publikom, pa svi zaplješću na dodavanje kroz noge ili sličnu atrakciju. Najljepše je kad su među navijačima studenti, pa me kasnije zaustave na hodniku i čestitaju mi na odlično odigranoj utakmici. Žao mi je što je na Fakultetu sport općenito često podcijenjen i htio bih da se to promijeni. Želim na višim godinama studija organizirati sportska događanja, malo udružiti ljude. Naravno da jednog dana želim raditi u struci, ali sport je sastavni dio mog života i ne želim se prestati baviti njime.

Matija Uremović, student

I think that I am a black sheep in my family. Besides being the only one in the family studying mechanical engineering, I also mean by my character. I'm much more open than the rest of my family, I'm the one who always wants to meet new people. Since I'm very loud in lectures, in halls, even in the canteen, many people know me. I already asked the ladies in the canteen if I could work with them, but being the Faculty student it wasn't possible unfortunately. Also, last week when I was on a trekking trip to Sljeme mountain I saw that there was a vacancy advertised for an assistant cook, so I applied, in spite of not being much of a cook. People often misunderstand me, so they give strange looks or eye-roll at me. But others who know me better, realize that I'm just communicative, always in a good mood and trying to spread positive vibes. Professors are shocked at first, but later they get used to the fact that I simply need to turn around and talk during the exam. I'm not cheating; I need a psychological preparation to sit firmly for three hours. Once I asked a professor in an oral exam, if I could be approached in a bit more relaxed way. He laughed slightly and asked me which course I was studying. Students should team-up more at the Faculty, because everything is sometimes stiff. People don't give feedback, probably because of having a lot of assignments and exams. Besides when being with friends, I also try to lift the atmosphere in the sport hall, when playing futsal. Futsal is a very attractive sport, pretty intense with much course changing, sprints and fast turns. Winning is important to me, as to all athletes, but I love audience interaction the most. When everyone applauds to attractive playing, or when student fans approach me in the halls later and congratulate me on a great game. It's a pity that sport is often underestimated at the Faculty and I'd like to change that. I want to organise sport events and team-up people in higher years of my study. Of course I want to work in the field of my profession, but sport is an integral part of my life and I intend to keep it that way.



Dominik Grubišić, student

Nikad nisam bio „klasični strojar“ koji hoće samo doći do diplome, zanimale su me razne stvari i imam veliku sklonost prema čitanju pa čak i pisanju. U SUPEUS-u sam skoro tri godine, bio sam urednik časopisa SUMA. SUPEUS je studentska udruga za promicanje energetske učinkovitosti i savjetovanja, a SUMA znači SUPEUS-ov magazin. Iza rada u SUMA-i je postojala moja neka viša motivacija. Radi se o tome da sam rođen s dijagnozama koje su mi u jednom dijelu djetinjstva narušile sposobnost produkcije govora iako sam razumio što mi se govori. Nisam bio nijem nego mi je govor bio neflentan i sastojao se od pretežito kratkih rečenica, a one duže ne bi bile ispravno gramatički konstruirane. Uz to često dođu poteškoće s čitanjem i pisanjem. U šali kažem da se zapravo nisam imao na što žaliti pa sam šutio, sve mi je bilo super u životu! Imao sam malo drugačije odrastanje. Išao sam u vrtić pod nadzorom logopeda pa sam se cijele dane igrao učeći. Dali bi mi papir s tekstom koji bi sadržavao hrpetinu napola napisanih riječi i ja bih ih trebao dovršiti. Kroz cijelu osnovnu sam imao vrlo loše ocjene iz zadaćica, sastavaka, čitanja s razumjevanjem... Onda se kroz srednju školu i eseje počelo razvijati moje razmišljanje i, zbog svog tog uložnog rada, naučio sam jako dobro pretočiti svoje misli i konstruirati rečenice. Pisanje je predstavljalo način da pobijedim samog sebe, da testiram svoje granice, da kažem da sam, iako sam imao lošiju startnu poziciju, otišao dalje o drugih. Inače sam čovjek koji uvijek treba izazove, zato sam i upisao strojarstvo. Kad mi se ponudila prilika da budem glavni urednik SUMA-e, „dobra“ dva tjedna sam razmišljao hoću li prihvatiti ili ne, jer me mučio jedan sukob. SUMA mi je s jedne strane izazov, a s druge strane sam se pitao mogu li ja to s obzirom na svoju prošlost. I prevagnuo je je izazov u kojem opet želim pobijediti samog sebe.

Dominik Grubišić, student

I've never been a „typical engineer“ who just wants to get a diploma, I've been interested in a lot of things and I like reading and even writing. I have been a member of SUPEUS for three years and I was the editor of the SUMA magazine. SUPEUS is a student association for promoting energy efficiency and consultancy, and SUMA stands for SUPEUS' magazine. My work at SUMA was driven by an underlying motivation. I was born with a diminished ability to produce speech even though I understood what was being said to me. I wasn't mute, it's just that my speech wasn't fluent and consisted of predominantly short sentences, and the longer ones were not grammatically correct. This is often accompanied by reading and writing difficulties. I make a joke of the situation and say that I was silent because I didn't have anything to complain about, everything was great in my life! I was growing up different. I went to kindergarten under the supervision of speech therapists, so I was learning through play. I would be given a paper with a text that would contain a bunch of half-written words and I was supposed to finish them. Throughout elementary school, I had very bad grades in written assignments, reading comprehension... Then, throughout high school and by writing essays I began to develop my thinking and, because of the hard work I poured into, I learned how to put my thoughts on paper and construct sentences. Writing was a way to defeat myself, to test my limits, to say that although I had a worse starting position I went further than many other people. One could say that I'm a man who always takes on new challenges; I chose mechanical engineering because it posed a challenge. When I was offered an opportunity to be the editor-in-chief of SUMA, for two solid weeks I was thinking whether I should accept it, because I was troubled with a conflict. On the one hand, SUMA was a challenge and on the other hand, I wondered if I could do it because of my past. In the end, the prevailing rationale was that this was both a challenge and a way to defeat myself again.

Hrvoje Dorotić, doktorand

Kad sam počinjao sa studijem, nisam baš puno putovao. I tada je na trećoj godini bila industrijska praksa za koju sam trebao sastaviti svoj životopis. Što sam do tada postigao, što da napišem? Dao sam sve ispite u roku. Odlično, koga boli briga za to? Mladi student, pun elana, a ne možeš nikako to pokazati. I onda sam pričao s kolegama o Erasmusu. Pa ne znam, nije to baš za mene, to je ono na što ide netko drugi, ali ajde, pitat ću profesora što bi mi preporučio s obzirom na to da me baš zanima energetika, računalna dinamika fluida i vjetroturbine. On mi je preporučio jedno od boljih tehničkih sveučilišta u tom području, ono u Delftu u Nizozemskoj i pomogao mi oko pronalaženja prakse. Bio sam tamo tri mjeseca i naučio sam stvarno puno, od samostalnog znanstvenog rada do rješavanja izazova samostalnog života u stranoj zemlji. I dobro, sad sam već bio četvrta godina faksa, a između „bakalara“ i diplomskog kod nas jednostavno nema vremena. Kako se kaže, vrag mi nije dao mira, pa sam si rekao, sad je prilika, trebam iskoristiti ovo vrijeme do kraja fakulteta, idem sa curom na „Work and Travel“, program putovanja i sezonskih poslova u SAD-u. Prvo smo bili u Breckenridgeu u Coloradu. To je gradić na oko 3000 metara visine u planinama. Mi smo tamo radili u održavanju u hotelu, spremali sobe sa smješkom na licu i slično. Kad smo malo zaradili obilazili smo San Francisco, Los Angeles, Las Vegas, New York i ostale gradove.

Dok sam bio u Americi, dobio sam ponudu za stručnu praksu u Brazilu na Sveučilištu u Campinasu. Tamo sam radio na projektu integracije proizvodnje bioetanola iz šećerne trske u zemljama u razvoju. U Brazilu svi auti voze ili na mješavinu benzina i bioetanola ili čisti bioetanol koji se dobiva iz šećerne trske. Bio sam u Rio de Janeiru. Turistički dio grada je prekrasan, od Copacabane do Maracane, no ako pogledaš malo dalje odmah vidiš favele.

Putovanja su za mene skupljanje malih iskustava, na temelju kojih stvaram širu sliku. Zato sam i upisao doktorat, gdje svojim malim doprinosom upotpunjujem cjelokupno znanje. Energetika je vrlo interesantna jer istovremeno obuhvaća područja fizike, strojarstva, makroekonomije, geopolitike i zaštite okoliša. U zadnje vrijeme postala je česta tema javnih rasprava na hrvatskoj, odnosno globalnoj razini. Kao grupa, pokušavamo riješiti vrlo složena i trenutno popularna znanstvena pitanja poput povećanja udjela obnovljivih izvora energije u elektroenergetskom sektoru i optimizacije energetske sustava.

Hrvoje Dorotić, doctoral student

When I was at the beginning of my study, I didn't travel much. Then my third year industrial practice started for which I had to write my CV. What have I achieved so far, what to write? I've passed all the exams in time. Nice, but who cares? Young dashing student but I couldn't show that. Then I talked to my colleagues about Erasmus program. Well I don't know, that's not for me, somebody else does things like that. But hey, I'll ask my professor for an advice given that I'm interested in the field of energetics, computational fluid dynamics and wind turbines. He suggested TU Delft in the Netherlands, which is one of the best technical universities in that field and helped me in my search for internship. I was there for 3 months and I learnt quite a lot, from conducting an independent research to handling the challenges of independent living in a foreign country. Well, I was already at my fourth year of study at the time, and time is scarce at that level. I couldn't settle for less, so I said to myself that I'm going to use all the time left until the end of my study. My girlfriend and I went on Work & Travel USA program. We were first in Breckenridge in Colorado. That's a small city in the mountains, at the height of about 3000 meters above the sea level. We worked in a hotel as room cleaners. When we made some money, we went to San Francisco, Los Angeles, Las Vegas, New York and other cities.

While in USA, I got an offer for an internship at the University of Campinas in Brazil. There I worked on a project to integrate bioethanol production from sugar cane into developing countries. In Brazil, everybody drives cars either on gasoline and bioethanol mixture, or pure bioethanol fuel made from sugarcane plant. I've also visited Rio de Janeiro. The tourist part is beautiful, from Copacabana to Maracanã, but if you look a bit further you can notice favelas.

For me, traveling means gathering small experiences, based on which I create a wider picture. This is why I also enrolled a doctorate, where I can complete the entire knowledge with my little contribution. Energetics is a very interesting field which deals with physics, engineering, macroeconomics, geopolitics and ecology. It has often been publicly discussed lately, not just in Croatia but also globally. As a group, we try to solve sophisticated and popular scientific problems such as expanding the renewable energy sources in the electric power sector and optimizing energy systems.



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