HUMANS OF FSB

VOL. 8

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Dragi čitatelji,

zamislite hodnike kojima odjekuju ideje, predavaonice ispunjene ambicijama i laboratorije gdje vizije postaju stvarnost. U tim prostorima, iza svakoga projekta, svakoga uspjeha, stoje ljudi – jedinstveni, nadahnjujući, puni snova i strasti.

Osmo izdanje *Humans of FSB* donosi vam njihove priče: priče o njihovim strahovima, uspjesima, porazima i ponovnim usponima. Na ovim stranicama upoznat ćete 18 nevjerojatnih pojedinaca koji su, svaki na svoj način, ostavili trag na Fakultetu strojarstva i brodogradnje i daleko izvan njegovih zidova.

Svaka priča vodi vas na putovanje kroz svjetove različitih interesa, karijera i ostvarenja. Upoznat ćete sadašnje i bivše studente, profesore, istraživače... Ljude koji su odlučili da im prosječnost nije opcija. Kroz intervjue i razgovore doznajemo što motivira te ljude, kako su se razvijali tijekom svojega vremena na FSB-u i kako su postali vrhunski profesionalci u svojim područjima.

Humans of FSB podsjetnik je da je snaga svake zajednice u ljudima. Dokaz je da FSB nije samo obrazovna ustanova nego i mjesto gdje se rađaju vizije, ostvaruju snovi i oblikuje budućnost.

Zahvaljujemo svima koji su podijelili svoje priče i svima koji su omogućili nastanak ovoga izdanja.

Uživajte u pričama koje slijede i dopustite im da vas nadahnu.

Dear readers,

Imagine hallways echoing with ideas, classrooms filled with ambition, and laboratories where visions come to life. In these spaces, behind every project and every success, stand people – unique, inspiring, full of dreams and passion.

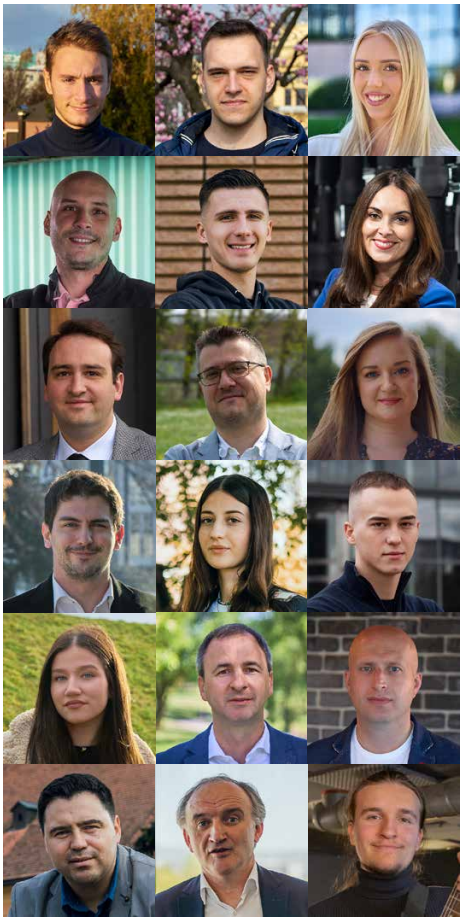
The eighth edition of *Humans of FSB* brings you their stories. Stories of their fears, achievements, setbacks, and comebacks. On these pages, you will meet 18 remarkable individuals who, each in their own way, have left their mark on the Faculty of Mechanical Engineering and Naval Architecture and far beyond its walls.

Each story takes you on a journey through worlds of diverse interests, careers, and accomplishments. You will meet current and former students, professors, and researchers – people who have decided that mediocrity is not an option. Through interviews and conversations, we discover what motivates these individuals, how they evolved during their time at FSB, and how they became top professionals in their fields.

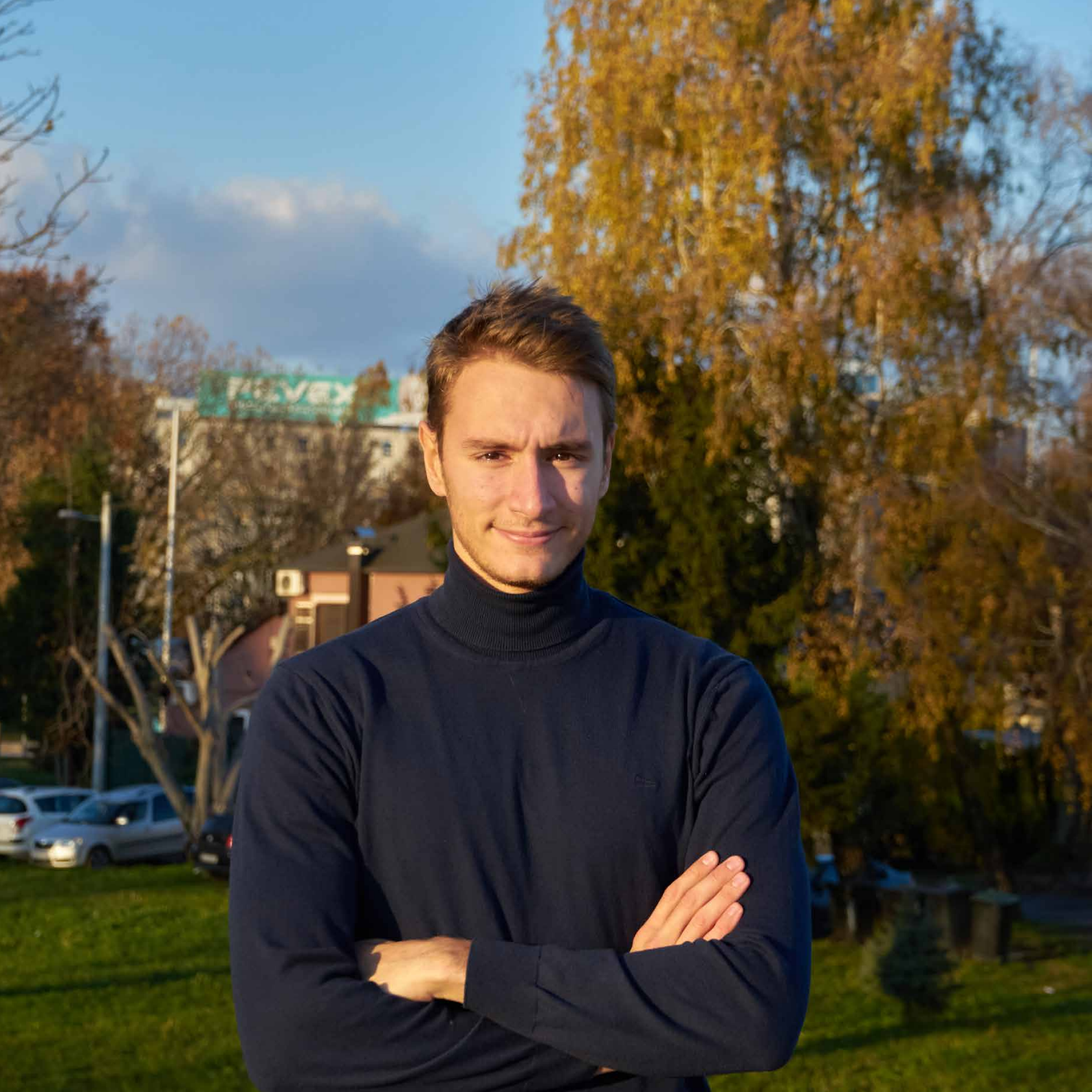
Humans of FSB serves as a reminder that the strength of any community lies in its people. It is proof that FSB is not just an educational institution but a place where visions are born, dreams are realized, and the future is shaped.

We are grateful to everyone who shared their stories and to all who made this edition possible.

Enjoy the stories that follow, and let them inspire you.



HUMANS OF FSB



Bartol Bućan, student

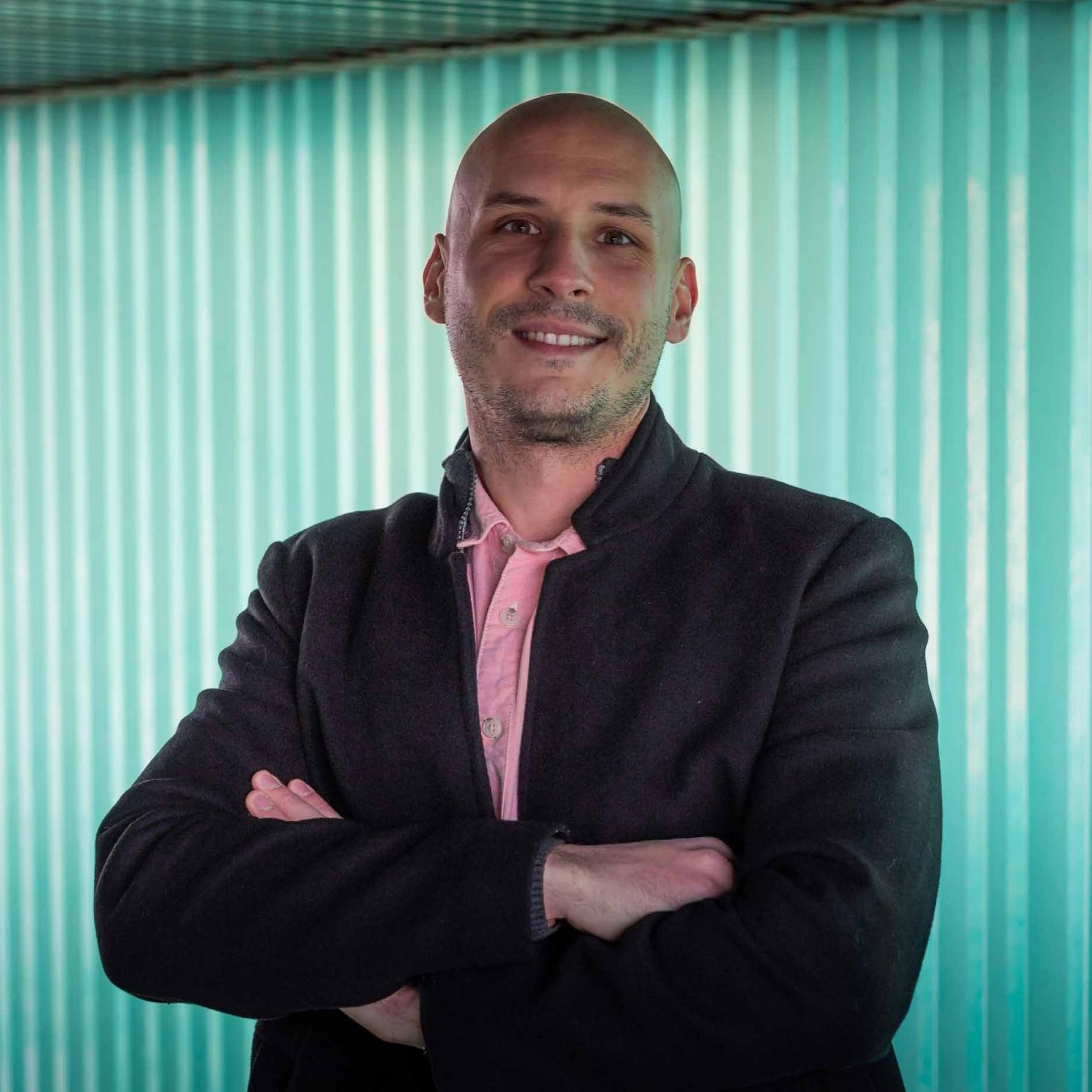
Nakon završetka nastave u osnovnoj školi, redovito sam odlazio baki i djedu na ručak dok bi moji roditelji završavali s poslom. Ondje sam započeo intenzivnije učiti matematiku i fiziku, koje je sa mnom vježbao djed. Svidjelo mi se rješavanje zadataka koje sam smatrao nekim načinom zabave. Što bi zadatak bio teži, to sam se bolje osjećao kada bih uspio doći do rješenja. Ubrzo sam počeo ići na natjecanja. Dvaput sam bio državni prvak iz fizike, jednom prvak i viceprvak iz matematike. Sudjelovao sam i na mnogim međunarodnim natjecanjima. Godine 2018. osvojio sam brončanu medalju na Juniorskoj balkanskoj matematičkoj olimpijadi i broncu na Međunarodnoj juniorskoj prirodoslovnoj olimpijadi te 2019. godine srebro na Europskoj prirodoslovnoj olimpijadi. Prvu godinu fakulteta prošao sam s prosjekom 5,0, a mogu reći da sam u to uložio mnogo truda. Druga godina izgleda mnogo zahtjevnije, ali nadam se istom uspjehu kao i u prvoj godini.

Prije nego što sam počeo trenirati veslanje, trenirao sam košarku na nagovor oca koji se poluprofesionalno bavio istom. Interes za veslanje javio se još u osnovnoj školi, a započeo sam trenirati već u sedmom razredu. To je šport koji se trenira na zraku, na moru, okružen prirodom, ali istovremeno je zahtjevan i intenzivan. Traži od tebe da pomičeš granice svoje izdržljivosti, kako psihički, tako i fizički. Veslanje me naučilo disciplini, pomoglo mi sa zdravljem, donijelo mi je mnoge prijatelje i nezaboravna iskustva. Što je odrađeni trening teži, to se bolje osjećam, baš kao i s rješavanjem zadataka. Sve je to na kemijskoj bazi, gdje se pri težem dolasku do cilja luči veća količina serotonina. Smatram da sam pravi dokaz da športski život ne mora patiti zbog školskih obveza, čak ni kada postignete visok stupanj uspješnosti. Često me pitaju kako uspijevam balansirati obveze između veslanja i fakulteta, jesu li mi naporni ti zahtjevi. No, za mene veslanje i fakultet nisu dva odvojena entiteta – oni su međusobno povezani. Za oboje je potrebna volja i disciplina. Uvijek mi je cijeli dan isplaniran, a do sada sam uspijevao održavati tu ravnotežu. Dan mi počinje u 9 ujutro, nakon doručka slijede 3 sata treninga, nakon ručka posvećujem se učenju, a kod večeri postoje odstupanja koja ovise o danu u tjednu, bilo da ih provodim s prijateljima ili kod kuće. Vikendi su rezervirani za izlaske i opuštanje.

Bartol Bućan, student

When I was in elementary school, after classes I used to go for lunch to my grandparents while my parents were at work. There, I began to study mathematics and physics more intensively because my grandfather was helping me with the exercises. I liked solving physical and mathematical problems, which I considered a form of entertainment. The more difficult the task, the better I felt when I managed to come up with a solution. Soon I started taking part in competitions. Twice I was the state champion in physics, and once the champion and once the first runner-up in mathematics. I also took part in many international competitions. I won a bronze medal at the Junior Balkan Mathematics Olympiad in 2018, another bronze medal at the International Junior Science Olympiad in the same year, and a silver at the European Science Olympiad in 2019. I completed my first year of study with a 5.0 grade average, and I can say that I put a lot of effort into it. The second year seems to be much more demanding, but I hope I'll be equally successful as in the first year.

Before I started rowing, I was playing basketball because my father, who used to play basketball semi-professionally, persuaded me to choose this sport. I became interested in rowing already in elementary school and started training in the seventh grade. It is an outdoor sport, you can row at sea, you are surrounded by nature; at the same time it is demanding and intense. You have to push the limits of your endurance, both mentally and physically. Rowing taught me discipline, improved my health, and helped me make new friends and gain unforgettable experiences. The harder the training, the better I feel, it's just like with solving mathematical tasks. All this is a chemical reaction, in which a great amount of serotonin is secreted when it is more difficult to reach a goal. I believe I'm living proof that, in spite of the school obligations, one can be a successful athlete, even outstandingly successful. I am often asked how I manage to balance my rowing training with the academic obligations, whether I find these demands heavy. But for me, rowing and college are not two separate entities – they are interconnected. Both require will and discipline. My every day is always planned, and so far I've managed to maintain that balance. My day starts at 9 a.m., then, there are three hours of training after breakfast, and after lunch, I devote myself to learning. My evenings are always different, depending on the day of the week: sometimes I go out with friends and sometimes I stay at home. Weekends are reserved for going out and relaxing.



Bruno Dogančić, viši asistent

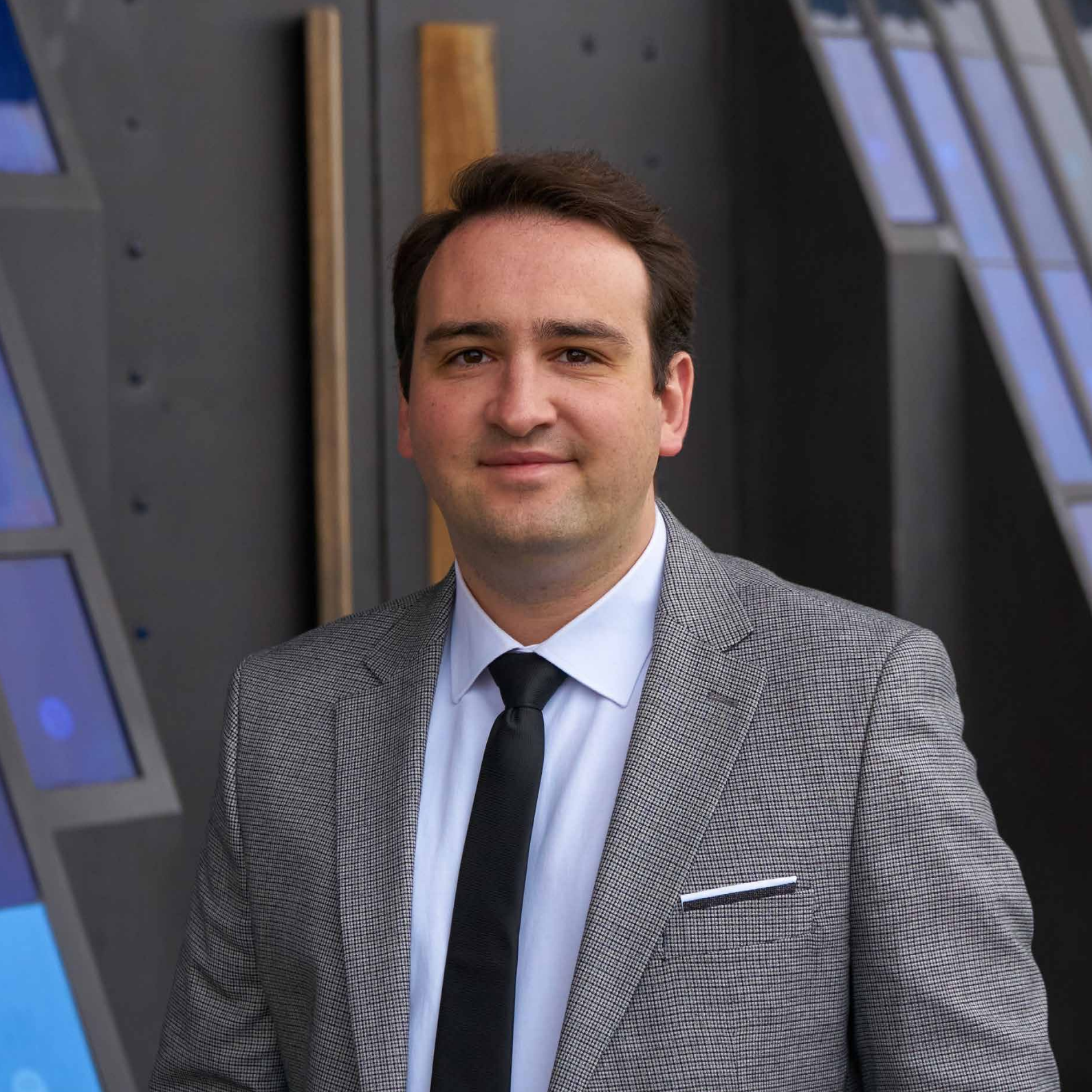
Otkako pamtim, privlačile su me sve prirodne znanosti. Dandanas obiteljsku kuću u Privlaci kod Vinkovaca, gdje sam odrastao, krasi regal od hrastovine koji je prepunjen raznim stručnim knjigama i enciklopedijama. Čim sam naučio listati stranice, studiozno bih danima čitao takve knjige i ispitivao svojega oca o piramidama, ljudskom tijelu, kemijskim spojevima, atomima i tehnici. Kada nisam čitao enciklopedije, pokušavao bih reproducirati sve što sam vidio u knjigama. Često bih rastavio i neuspješno sastavio sve svoje igračke do predzadnjeg šarafića, jer kako se zna reći: „Nisi napravio dobar posao ako ti nije ostao makar jedan šaraf viška!" Po dvorištu bih uredno betonirao stvari koje nije trebalo i za potrebe svojih eksperimenata iskoristio bih što sam smio i što nisam smio. Radio sam pametno i trudio se sigurno premda bilo je tu i eksperimenata koji nisu preporučljivi, kao što je izrada bombi od solne kiseline i cinka, spajanje 3V DC motora na 220V AC, pištolja na petarde itd. Zahvalan sam dragom Bogu što me kemikalije, 220V i razne eksplozije nikad nisu ubile. Kada nisam „kemijao", obično sam vrijeme provodio u prirodi ili trenirajući nogomet, rukomet i atletiku.

Kako mi je struja bila nedodirljiva i neopopljiva, za studiranje sam odabrao strojarstvo na FSB-u. Kad god bih dobio priliku, koristio bih svoja znanja iz širokog područja prirodnih znanosti na *Case Study* natjecanjima jer obožavam *out-of-the-box* razmišljanje. Takav način razmišljanja stvara pregršt prilika za inovacije. Krajem diplomskog studija nastavila se velika želja za istraživanjem pa sam zbog toga odlučio doktorati. Sretan sam što nikada nisam izgubio želju za elektrotehnikom i matematikom, pa mi je velik dio doktorata bio automatska regulacija i optimalna kontrola. Sada kada sam se oženio i imam djecu, svoju obiteljsku kuću u Zagrebu također nastojim učiniti pametnom: što glede raznih stvari koje implementiram kroz tzv. *smart home* sustav, ali isto tako i literaturom kojom želim svoju djecu zainteresirati za prirodne znanosti. Volim sa svojom djecom raditi raznorazne *uradi-sam* projekte, kroz koje zajedno učimo, stvaramo i istražujemo svijet. A kako se bliži Božić, od Djeda Božićnjaka sam pod bor zaželio 3D printer i upravo sam dobio e-poruku s brojem za praćenje pošiljke – 3D printer je na putu! Jedva čekam da se radionica proširi za još jedan alat i sve nove prilike i izazove za istraživanjem i stvaranjem! Želim svima sretan i blagoslovljen Božić!

Bruno Dogančić, senior assistant

Ever since I can remember, I have been attracted to all the natural sciences. To this day, the in my family house in Privlaka near Vinkovci, where I grew up, there is an oak bookshelf filled with various specialized books and encyclopaedias. As soon as I learned to turn the pages, I would studiously read such books for days and ask my father about the pyramids, the human body, chemical compounds, atoms and technology. When I wasn't reading encyclopaedias, I tried to copy everything I saw in the books. I would often disassemble and unsuccessfully assemble all my toys down to the penultimate screw, because as the saying goes: "You haven't done a good job if you have not even got one screw left!". I would neatly concrete things around the yard that were not needed and used what I could and couldn't for my experiments. I worked smart and tried hard, although there were also experiments that are not recommended: e.g. making bombs out of hydrochloric acid and zinc, connecting a 3 V DC motor to 220 V AC, a firecracker gun, etc. I am grateful to God that chemicals, 220 V and various explosions have never been fatal. When I wasn't doing chemistry, I usually spent my time in nature or training football, handball, and athletics.

Since electricity was untouchable and intangible for me, I decided to study mechanical engineering at FSB. Whenever I have the opportunity, I use my knowledge in the broad field of natural sciences in "case study" competitions, because I love "out-of-the-box" thinking. This way of thinking creates a multitude of opportunities for innovation. At the end of my graduate studies, I still had a strong desire to do research, so I decided to do a PhD. I am fortunate that I never lost my enthusiasm for electrical engineering and mathematics, so a large part of my doctoral thesis was about automatic regulation and optimal control. Now that I am married and have children, I am also trying to make my family home in Zagreb smart. This involves the various things I implement through the so-called "Smart Home" system, but also literature, which I use to get my children interested in the natural sciences. I like to do various DIY projects with my children through which we learn, create, and explore the world together. And as Christmas is approaching, I have asked Santa for a 3D printer under the Christmas tree and I have just received an email with the tracking number that the 3D printer is on its way. I can't wait for another tool to be added to the workshop and all the new opportunities and challenges to explore and create! I wish everyone a happy and blessed Christmas!



Marko Mimica, viši asistent

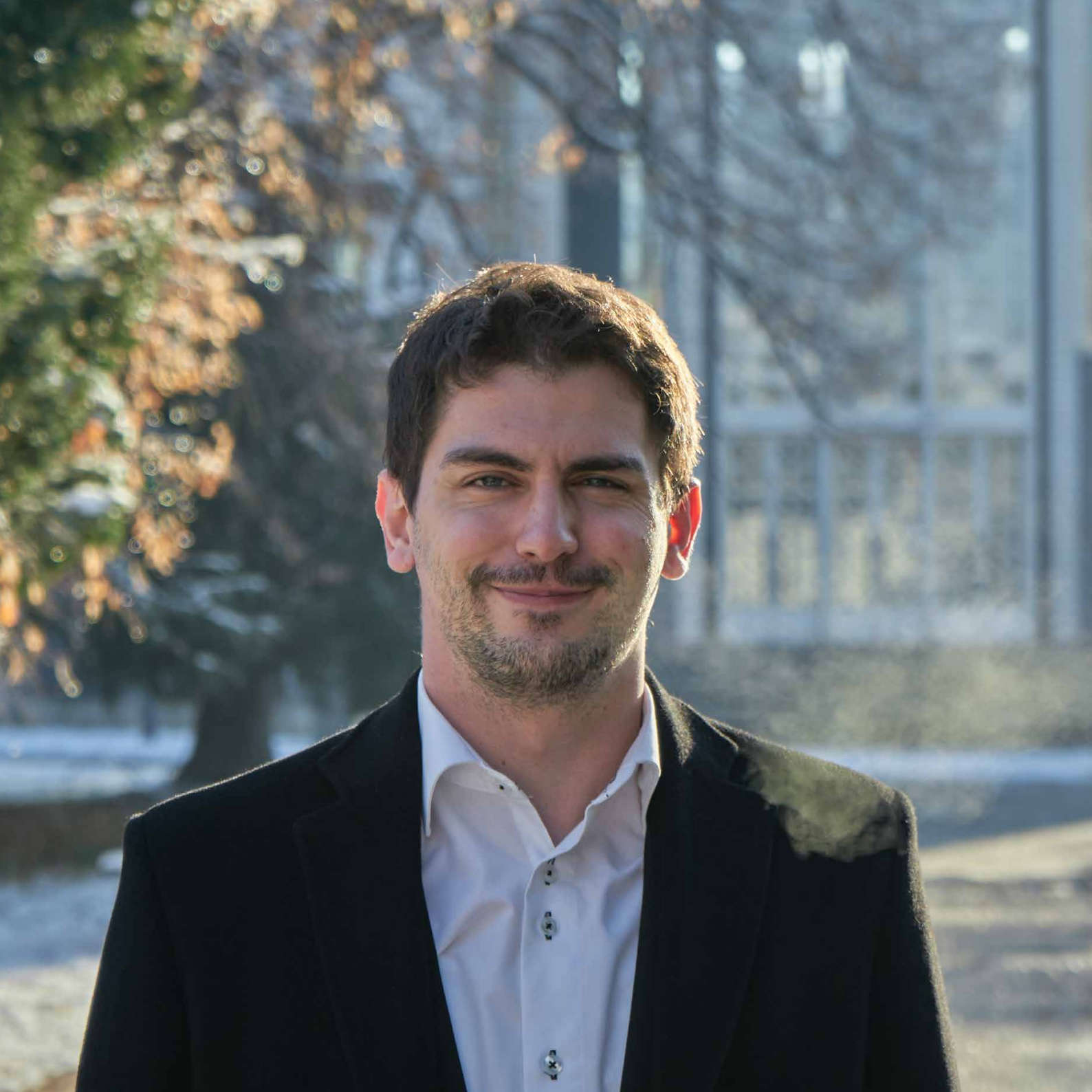
Uvijek se vraćam na to: FSB u duši, FER u srcu. Može i obratno. Godine 2012. došao sam u Zagreb iz Splita studirati na FER-u i ondje sam se bavio elektroenergetikom, a ujedno sam bio dosta aktivan u studentskim krugovima, gdje sam bio predsjednik Europske udruge studenata elektrotehnike. Nakon diplomiranja na smjeru elektroenergetike na FER-u, neko sam vrijeme radio u privredi za tvrtke poput Končara, CER-a i Siemensa, s kojima dandanas surađujem. Moj put do sadašnje pozicije višeg asistenta na FSB-u započeo je od već spomenute udruge na FER-u. Jedne večeri 2018. godine, sjećam se, na alumni druženju udruge elektrotehničara, kći profesora Deura igrom je slučaja spomenula kako njezin otac stalno traži ljude na fakultetu. Prihvatili su me ovdje kao svoga, a i jako se dobro dopunjuju znanja studenata s oba faksa. Najdraži dio posla na faksu mi je to što se sutra mogu probuditi i raditi što god poželim. Mogu što god mi padne na pamet dovesti od same ideje projekta do realizacije financiranja projekta u svega nekoliko mjeseci. Također volim raditi u nastavi i sa studentima. Kako držim treninge iz prezentacijskih vještina, uloga predavača mi je nekako bila potpuno prirodna. Tijekom godina ujedno sam i obnašao dužnost predsjednika Studentskoga zbora Sveučilišta u Zagrebu te sam bio aktivan u raznim sveučilišnim tijelima. Često studenti misle da nema ništa od udruga i djelovanja u studentskim tijelima, ali zaista možete napraviti neke znatne promjene.

Doktorirao sam relativno nedavno, krajem 2022. godine, a sam doktorski rad predstavlja sjajno presjecište znanja s FSB-a i FER-a u području energetike s primjenom na pametnim otocima. Sjajna je okolnost bila i ta što je disertacija bila usko povezana s projektom koji smo radili na Unijama, jednom malom otoku u Kvarnerskom zaljevu. Ondje smo radili na desalinizacijskom postrojenju u sklopu kojega smo, zajednički s drugim partnerima na projektu, postavili jednu malu solarnu elektranu i baterijski spremnik, što nam je pomoglo istražiti kako osigurati napajanje otoka vodom i električnom energijom uz minimalne troškove. Općenito živimo u jednom jako zanimljivom i izazovnom vremenu, posebice u kontekstu energetike. Dekarbonizacija i zelena energetska tranzicija vjerojatno su ključno pitanje 21. stoljeća, stoga je zaista užitak raditi na pronalaženju rješenja za tako bitne izazove. Ono što nam sigurno treba je još puno mladih stručnjaka pa koristim i ovu priliku da pozovem studente da se sve više bave energetikom – sigurno nećete pogriješiti!

Marko Mimica, senior assistant

I keep coming back to this: FSB (Faculty of Mechanical Engineering and Naval Architecture) in the soul, FER (Faculty of Electrical Engineering and Computing) in the heart. It can also be the other way around. In 2012, I came from Split to Zagreb to study at the FER, where I dealt with power engineering. I was also quite active in student circles, where I was the president of the Electrical Engineering Students' European Association. After graduating from the Department of Energy and Power Systems at FER, I worked for some time in the commercial sector for companies such as Končar, CER and Siemens, with whom I still cooperate today. My path to my current position as a senior assistant at FSB started at the already mentioned association at FER. I remember one evening in 2018, at an alumni gathering of the Association of Electrical Engineers, Professor Deur's daughter happened to mention that her father was constantly looking for collaborators at the Faculty. They accepted me here as one of their own, and the knowledge that students from both faculties bring with them complements each other very well. My favorite thing about working at the university is that I can wake up tomorrow and do whatever I want. I can develop any idea that comes to my mind, from the project stage to funding and realizing the project in just a few months. I also love to teach and work with students. As I hold training courses in presentation skills, the role of a lecturer was somehow completely natural to me. Over the years, I also served as the president of the Student Council of the University of Zagreb and was active in various university bodies. Students often think that the activities in student bodies do not have that much impact, but you can really make some significant changes.

I received my PhD relatively recently, at the end of 2022, and the PhD itself represents a great intersection of FSB and FER knowledge in the field of energy with application to smart islands. Another great circumstance was that the doctorate was closely related to the project we were carrying out on the small island of Unije in Kvarner Bay. There, together with other partners on the project, we worked on a desalination plant in which we set up a small solar power plant and a battery tank. This helped us explore how the island can be supplied with water and electricity at minimal cost. In general, we are living in a very interesting and challenging time, especially in the context of energy. Decarbonization and the green energy transition are probably the key issues of the 21st century, so it is truly a pleasure to work on finding solutions to such essential challenges.



Nikola Mikšik, student

Glazbom se bavim od malih nogu. Starija braća su se bavila glazbom, pa sam ih u tome slijedio. Inače sam iz Požege, kod nas je tambura glavna stvar. Krenuo sam u osnovnu glazbenu školu za tamburu, a par godina kasnije zainteresirale su me i udaraljke. Kod udaraljki je jako zanimljivo što je svaki instrument drugačiji pa moraš biti jako prilagodljiv. Često je u notama samo otprilike zabilježeno koji set bubnjeva moraš imati. Sam proces je kreativan, što mi se baš sviđa. U jednom sam trenutku paralelno pohađao gimnaziju, srednju glazbenu školu za tamburu i osnovnu glazbenu školu za udaraljke. Profesori u glazbenoj tretirali su me kao da ću ići na akademiju te sam kroz srednju školu bio posvećen pripremama. U zadnjem polugodištu srednje škole ipak sam se predomislio, fokusirao sam se na maturu i upisao se na FSB. Htio sam i jedno i drugo, ali sam se na kraju upisao na strojarstvo jer mi je za to zanimanje diploma nužna.

U klapi FSB-a sam od njezina samog nastanka. Bio sam suosnivač uz Eugena, on to voli tako reći. Prije korone je došao na ideju da osnujemo glazbeni sastav. Budući da smo na ''muškom'' faksu, odlučili smo probati osnovati klapu. Ekipa je odlična, malo je drugačije jer su svi strojari i nikomu glazba nije primarno zanimanje pa je atmosfera opuštenija.

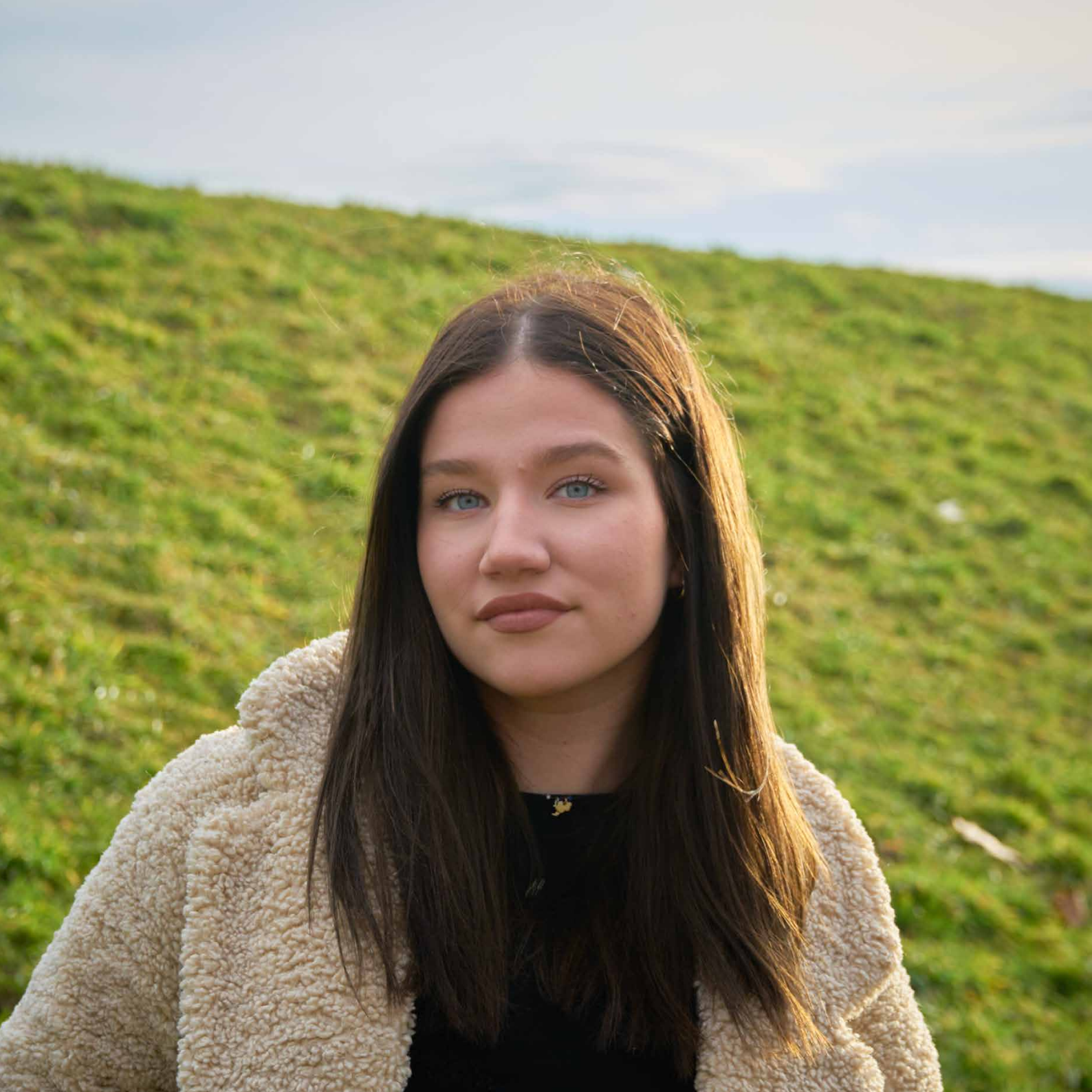
Nakon upisa na diplomski studij, razmišljao sam kako ukomponirati glazbu uz fakultet te sam našao kolegij tehničke prirode na Muzičkoj akademiji koji sam upisao kao izborni. Naziv kolegija je Stvaranje zvuka i glazbe računalnim programiranjem. Stvaramo zvuk iz nule na način da baratamo sa signalima i podatcima, ali na elementarnoj razini. Stvoriš signal i pomoću logičkih operacija dobiješ zvuk koji, ako ga dovoljno oblikuješ, postane glazba. Također, kao drugi izborni upisao sam i kolegij na FER-u koji se zove Audio produkcija. Spoj strojarstva i glazbe nalazim u područjima akustike, dinamike strojeva i aktivne kontrole vibracija. Nakon što sam odlučio upisati se na strojarstvo, obećao sam samome sebi da ću se glazbom baviti nekada kasnije u životu ili paralelno. Zasad je tako, a dalje ćemo vidjeti.

Nikola Mikšik, student

I've been playing music since I was a child. My older brothers were playing music, so I followed in their footsteps. I'm from Požega, and the tamboura is a big thing there. I started a primary music school for the tamboura, and a few years later, I became interested in percussion instruments. Percussion instruments are fascinating because each one is different, so you have to be very adaptable. For example, in the sheet music it is only approximately indicated which drum set you need to use. The musical process itself is creative, which I really like. At one point, I simultaneously attended high school, a secondary music school for the tamboura, and a primary music school for percussion. The music teachers treated me as if I would go to the academy of music, so throughout high school, they were preparing me for the academy. In the last semester of high school, however, I changed my mind, focused on the graduation exams, and enrolled in the Faculty of Mechanical Engineering and Naval Architecture (FSB). I wanted both, but in the end, I chose mechanical engineering because a degree is required for engineering positions.

I've been a member of the FSB klapa (a Croatian a cappella singing group) since its inception. I co-founded it with Eugen, as he likes to say. Before the pandemic, he came up with the idea to create a musical ensemble. Since we're at a "male" faculty, we decided to try starting a klapa. The team is excellent; it's a bit different because everyone is an engineering student, and music is not the primary profession for anyone, so the atmosphere is more relaxed.

After enrolling on the graduate program, I thought about how to incorporate music into my studies. I found a technical course at the Academy of Music called "Sound and Music Creation by Computer Programming," which I enrolled on as an elective. We create sound from scratch by manipulating signals and data, but at a basic level. You create a signal and through logical operations, you get sound that, if shaped enough, becomes music. Also, as another elective, I enrolled on a course at the Faculty of Electrical Engineering and Computing (FER) called "Audio Production." I find the connection between mechanical engineering and music in the fields of acoustics, machine dynamics, and active vibration control. After deciding to study mechanical engineering, I promised myself that I would pursue music later in life or I'll make music simultaneously. So far, it works, and we'll see where it goes in the future.



Lucija Marijetić, studentica

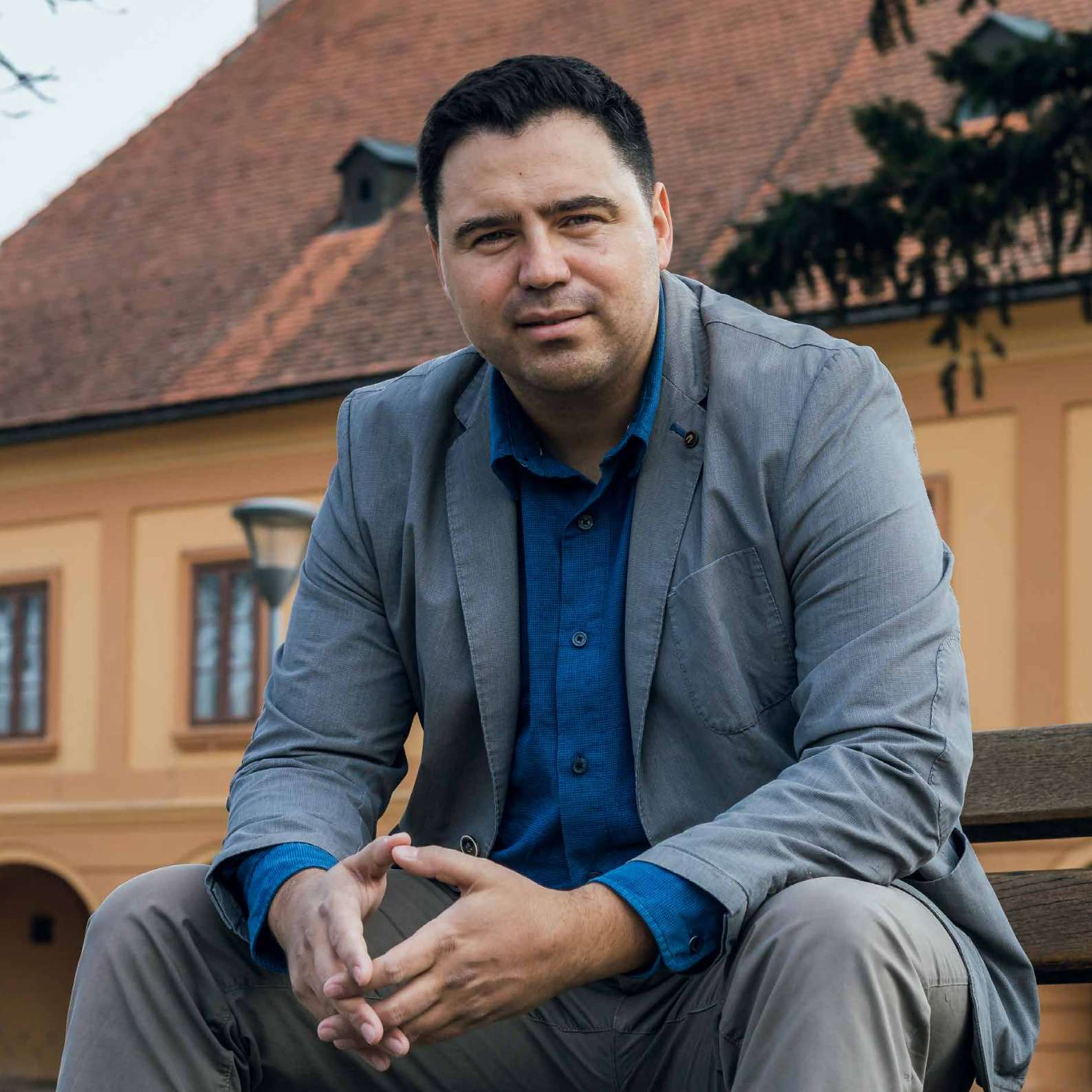
Za ESTIEM sam prvi put čula na veslačkoj regati. Između utrka bile su prezentirane studentske udruge, među kojima me posebice zaintrigirala udruga mog usmjerenja – industrijsko inženjerstvo i menadžment. Ubrzo sam saznala da je ESTIEM prije svega europska studentska organizacija, što samim time nosi i međukulturni aspekt. Oduvijek sam bila tip osobe koja ne uživa isključivo u učenju i teoriji, a ESTIEM je nudio upravo sve što sam tražila od jedne studentske udruge. U početku sam u radu lokalne grupe sudjelovala kao članica. Ubrzo sam postala aktivna na svim razinama, sudjelujući u organizaciji događaja, konferencija te studentskih razmjena. Cilj mi je bio napredovati i s vremenom preuzeti značajniju ulogu u lokalnoj grupi, što sam i uspjela početkom ove godine, kada sam izabrana za predsjednicu lokalne grupe Zagreb, a ubrzo potom i za koordinatoricu naše regionalne grupe – Balkan regije. Moja je zadaća kontrolirati, nadzirati i podupirati lokalne grupe. Ja sam glavna poveznica između lokalnih grupa sa centralnom razinom.

U ESTIEM-u postoje četiri vrste *evenata*, s naglaskom na tip razvoja: eventi akademskog, karijernog, osobnog i međukulturnog razvoja. Važno je da svaki student pronađe svoje mjesto unutar udruge, pa tako i na fakultetu. Neki vole sudjelovati u organizaciji, raditi na vještinama poput upravljanja vremenom, resursima i financijama. S druge strane, ima studenata koji jednostavno vole ići na cjenovno prihvatljiva putovanja. Jedan od naših uspješnih projekata svakako je i *podcast* na Spotifyu. Obrađuje sve teme vezane za industrijsko inženjerstvo i menadžment, ali isto tako uključuje viziju ESTIEM-a. U ESTIEM-u sam prvo naučila dragocjenu lekciju o tome koliko su nevažni različiti aspekti života pojedinca – pozadina, jezik, kultura. Ondje smo svi povezani poput obitelji premda se možda vidimo samo jednom ili dvaput godišnje. Svaki put kad ih susretnem, osjećam tu posebnu vezu koja mi pruža utočište kad god mi je to potrebno. Upravo zbog toga vjerujem da ću ostati uključena tijekom cijelog svog studiranja, a možda u bliskoj budućnosti osigurati i mjesto u *Boardu* među šestero glavnih unutar cijelog ESTIEM-a. Često se ističe da fakultetski život podrazumijeva redovita predavanja, obvezne vježbe i polaganje ispita, pa studenti nisu potpuno svjesni obilja prilika koje se pružaju izvan učionice. Kroz svoje iskustvo shvatila sam koliko takve prilike mogu obogatiti studentski život i pridonijeti osobnom i profesionalnom razvoju.

Lucija Marijetić, student

I learned about ESTIEM for the first time at a rowing regatta. Student associations were presented between the races, among which the association for industrial engineering and management, my major, really piqued my interest. . It didn't take me long to discover that ESTIEM is a European student organization, which therefore has an intercultural aspect. I have always been the type of person who does not enjoy only learning and theory, and ESTIEM offered everything I was looking for in a student association. My first involvement in a local group started by being a member, just a cog in the wheel. Soon I actively involved in all aspects of the organization, participating in the organization of events, conferences, and student exchanges. My goal was to advance and take on a more significant role in the local group for a while, which I accomplished at the beginning of this year when I was elected president of the Zagreb local group, and then the coordinator of our regional group – the Balkan region. My task is to control, monitor, and support local groups. I am the main link between the local groups and the central level.

There are four categories of development-related activities in ESTIEM: academic, career, personal, and intercultural development events. It is crucial that every student finds his/her place both in the association and at the university. Some students enjoy being active members of the organization, developing skills such as time management, resource and finance management. On the other hand, some students simply like to go on affordable trips. One of our successful projects is a podcast on Spotify. It covers all the topics related to industrial engineering and management, including the ESTIEM vision. At ESTIEM, the first valuable lesson I was taught was how irrelevant different aspects of an individual's life are – background, language, and culture. We are all connected there like a family, even though we may only see each other once or twice a year. Every time I meet them, I feel that special bond that gives me refuge whenever I need it. That is why I believe I will remain involved during my studies, and perhaps, soon secure one of the six major positions on the Board for the entire ESTIEM. I believe that college life mainly emphasizes regular lectures, mandatory practical classes and taking exams, and students are not fully aware of the abundance of opportunities outside the classroom. My own experience made me realise how much these opportunities can enrich student life and contribute to personal and professional development.



Hrvoje Mikulčić, iskusni istraživač na projektu

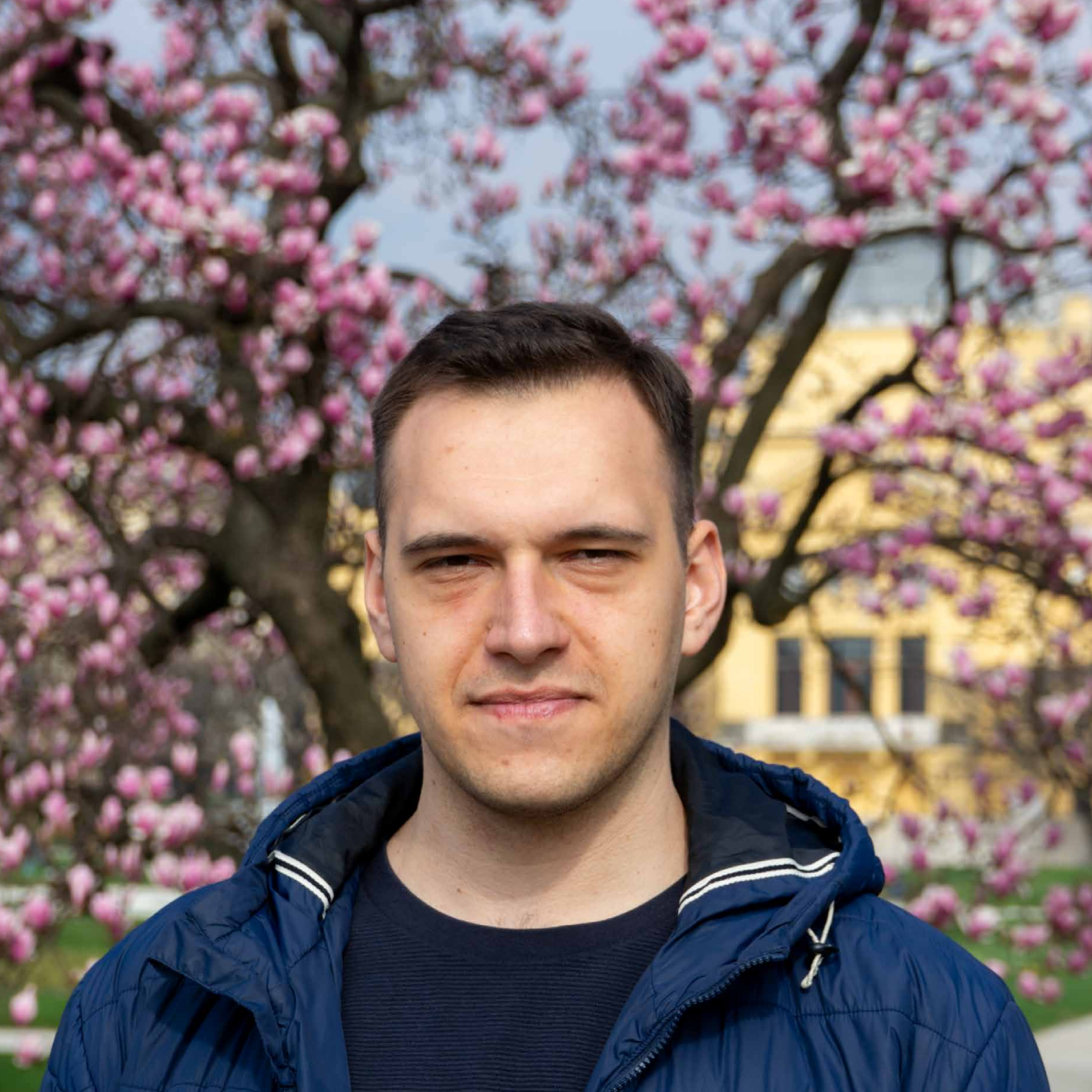
Uvijek govorim da sam završio FSB u manje od 5 godina odnosno u 4 godine i 9 mjeseci. Trudio sam se sve završavati u prvim rokovima kako bih imao vremena cijelo ljeto. Volim jako putovati, upoznavati nove kulture, nove ljude, nove običaje, nove kuhinje. Tako sam ljeto 2007., nakon treće godine studija, privatno boravio u Pittsburghu na Sveučilištu Carnegie Mellon. To mi je bio prvi posjet SAD-u i na neki način mi je promijenio shvaćanje mojih sposobnosti. Pri povratku sam, paralelno sa studijem, počeo proučavati koja su to strojarska zanimanja i tvrtke koje se bave računalnim simulacijama i gdje je poželjno imati znanje o prijenosu mase i topline te o programiranju. Tako sam došao do tvrtke AVL-AST d. o. o., gdje sam išao na studentsku praksu. Na 4. godini studija moja dugogodišnja djevojka ostala je u drugom stanju. Društvo, kakvo već je, to je shvaćalo na svoj način, međutim uz potporu roditelja i obitelji te veoma angažiranim vlastitim zalaganjem, mogu reći da smo oboje završili fakultete i da smo u sretnom braku već 15 godina s prekrasna tri sina. Nakon obrane doktorata u 2015. godini, fokus mojih istraživanja pomaknuo se na druga područja, sve zato što sam tijekom doktorata vidio i našao interes u novim tehnologijama energetske tranzicije.

U isto vrijeme nakon doktorata dobio sam priliku dodatno promijeniti polje istraživanja. Naime, u to sam vrijeme počeo intenzivnije surađivati sa sveučilištem Xi'an Jiaotong u gradu Xi'anu u Kini. Kako sam se do tada intenzivno bavio numerikom, a oni su se bavili eksperimentalnom analizom različitih goriva, počeo sam se baviti i eksperimentima. To mi je postalo jako zanimljivo jer volim malo i uprljati ruke te raditi eksperimentalna mjerenja. Stalno usavršavanje i rad sa znanstvenicima s XJTU-a rezultirali su time da sam u razdoblju od 2019. do 2023. bio gostujući istraživač na projektu, a jedno vrijeme i naslovni poslijedoktorand, što je kod njih ekvivalent naslovnom docentu. Od siječnja 2019. do prosinca 2022. bio sam urednik u znanstvenom časopisu *Journal of Cleaner Production*. Sve to je pridonijelo tomu da je moja znanstvena izvrsnost potvrđena uvrštavanjem na Stanfordovu listu najboljih svjetskih znanstvenika zadnje tri godine. Smatram da je jednostavna i otvorena komunikacija, pozitivna radna atmosfera i otvorenost za suradnju jedini pravi i ispravan način boljitka za sve. Jer kada svi oko tebe napreduju, onda i ti napreduješ.

Hrvoje Mikulčić, an experienced researcher on the project

I always say that I completed FSB in less than 5 years, in 4 years and 9 months. I tried to finish everything before the first deadlines in order to fill the summer with private hobbies and travelling. I love travelling, getting to know new cultures, new people, new customs, new cuisines. So in the summer of 2007, after the third year of my studies, I went to Pittsburgh at Carnegie Mellon University. It was my first visit to the USA and in a way, it changed my understanding of my skills. On my return, parallel to my studies, I started researching to find out which engineering professions and companies deal with computer simulations and where knowledge of mass and heat transfer, as well as programming is desirable. That's how I came across the company AVL-AST Ltd., where I completed a student internship. During my 4th year of study, my girlfriend became pregnant. Society, being what it is, understood it in its own way, but, with the support of parents and family and with a very dedicated self-effort, I can say that we both graduated and have been happily married for 15 years and have three wonderful sons. After defending my doctorate in 2015, the focus of my research shifted to other areas, as I discovered new technologies for the energy transition during my doctorate and became interested in them.

At the same time, after my doctorate, I was given the opportunity to change my field of research and to work more intensively with Xi'an Jiaotong University in the city of Xi'an, China. As I had been intensively involved in numerical studies until then and they were working on the experimental analysis of various fuels, I also started to get involved in experiments. This became very interesting for me because I like to get my hands a little dirty and carry out experimental measurements. The continuous training and collaboration with the scientists at XJTU led to me being involved in the project as a visiting researcher from 2019 to 2023, partly as a postdoctoral researcher on the project, which is equivalent to the title of assistant professor for them. From January 2019 to December 2022, I was editor of the Journal of Cleaner Production. All this has contributed to my scientific excellence being recognised by being included in the Stanford list of the best scientists in the world for the last three years. I believe that simple and open communication, a positive working atmosphere and openness to cooperation is the only true and proper way to improve for everyone. Because when everyone around you is making progress, then you are making progress too.

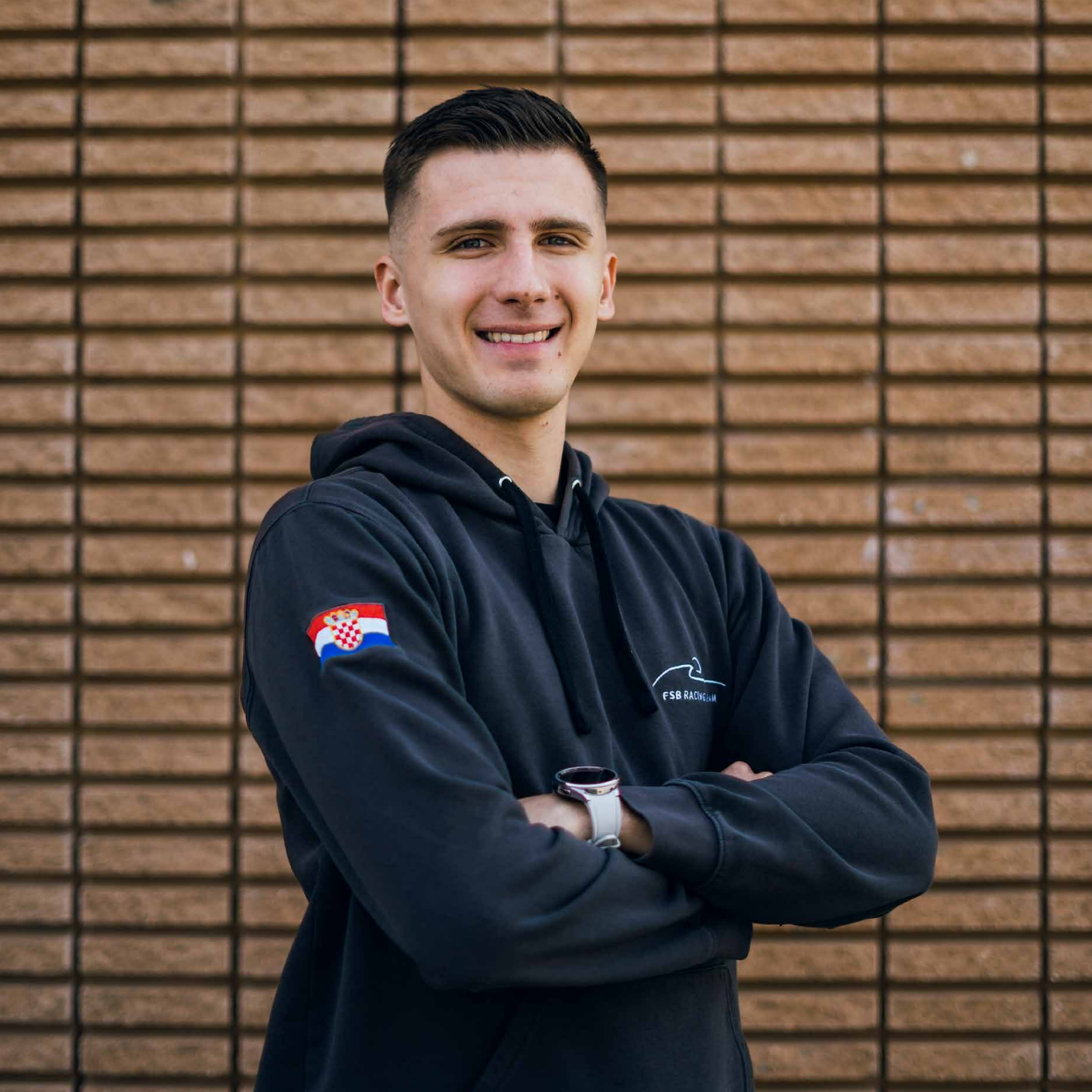


Dominik Matišin, student

U sedmom razredu osnovne škole razrednica nas je pitala u koju ćemo se srednju školu upisati. Prijateljica i ja smo odmah rekli: „U srednju ćemo u MIOC, a onda na FER." I tako je i bilo. Na prvoj godini FER-a jedan dobar prijatelj mi je rekao da na FSB-u postoji Racing Team, a kako i on i ja već dugo pratimo Formulu, odlučili smo se priključiti timu. U tom razdoblju počele su mi se motati misli po glavi o tom je li FER za mene ili nije, i ako nije za mene, što bih dalje. Izgurao sam drugu godinu, nekako i treću, ali sam tada shvatio da definitivno želim upisati nešto drugo. Odluka za FSB mi je došla dosta prirodno jer mi je FSB davao najveće prilike da radim u autoindustriji, što mi je želja nakon školovanja. Svoje mjesto u Racing Teamu sam privremeno napustio kako bih riješio predmete druge godine, ali se definitivno planiram vratiti. Vrijeme provedeno u timu doista je vrlo kvalitetno provedeno vrijeme, radi se u struci, radi se na rješavanju stvarnih problema i na razvoju sposobnosti rješavanja tih problema. Od svoje sam četvrte godine u sportu. Najprije sam se bavio triatlonom, ali nakon alergijske reakcije prebacio sam se na hokej. Trenutačno pauziram od hokeja, ali ozbiljno razmišljam o profesionalnom povratku. Bili smo uspješan tim: na svjetskom prvenstvu 2018. bili smo drugi, a 2020. dospjeli smo i do Južne Koreje, također na svjetsko prvenstvo. Volim se šaliti kako sam „zatvorio tri države" te godine, kad je krenula pandemija korone. Situacija je tada bila ograničena na prostor Kine, a priča je bila da je bolest samo jača prehlada. Kad smo sletjeli u Seul, glavni južnokorejski grad, podijelili su nam maske pa smo krenuli autobusom prema Gangneungu, gdje se održavalo natjecanje. Sve je bilo u redu dok nas petero nije završilo tri dana u krevetu. U svakom zlu nešto dobro, pa sam nakon tog razdoblja bio u najboljoj formi života. Ali, šalu na stranu, nikomu ne bih htio da prolazi što smo mi prolazili. Nismo puno razmišljali o bolesti, mislili smo da smo pojeli nešto pokvareno ili da nam je krivo sjelo. Vratili smo se kući i nastavili sa svojim rutinama. Zatim, nakon nekoliko dana posjetio sam Milano, gdje je sestra imala natjecanje – i stignem baš na dan kad je bila utakmica na kojoj je „prvi Hrvat pokupio koronu". Kasnije nisam bio bolestan, ali kad sam htio dati krv, rečeno mi je da imam antitijela i tek sam tada povezao da sam virus pokupio u Koreji. Tako sam dosta dugo u životopisu držao da sam „zatvorio tri države".

Dominik Matišin, student

In the seventh grade of elementary school, the teacher asked us which high school we would enrol in. My friend and I immediately said: "We'll go to MIOC (high school specialising in mathematics and computer science), and then to FER (Faculty of Electrical Engineering and Computing)." And that's what we did. During the first year at FER, a good friend told me about the FSB Racing Team, and since he and I had been following Formula 1 for a long time, we decided to join. During that period I had many thoughts running through my head about whether FER was for me, and if it wasn't, what I should do next. I pushed through the second year, and somehow through the third, but then I realised that I wanted to study something else. The decision to study at the FSB came quite naturally to me because it offered me the best opportunities to work in the automotive industry, which is what I want to do after school. I temporarily left my place on the Racing Team to deal with second-year subjects, but I plan to return. The time spent on the team is time well spent. You work in your profession, you work on solving real problems and on developing the ability to solve those problems. I have been in sports since I was four years old. At first I did triathlon, but after an allergic reaction I switched to hockey. I am currently taking a break from hockey, but I am seriously considering a professional return. We were a successful team, we came second at the 2018 world championship, and in 2020 we reached South Korea, also at the world championship. I like to joke that I closed three countries that year when the pandemic started. At that time, the situation was confined to the territory of China, and the story was that the disease was just a stronger cold. When we landed in Seoul, the capital of South Korea, we were given masks and taken by bus to Gangneung, where the competition was held. Everything was fine, until the five of us ended up in bed for three days. There is something good in every bad situation, so after that period I was in the best shape of my life. But joking aside, I wouldn't want anyone to go through what we went through. We didn't think much about the illness, we thought that we had eaten something rotten or that it had sat wrong with us. We returned home and continued our routines. Then, after a few days, I visited Milan, where my sister had a competition and – I arrived on the day of the football match where "the first Croatian got the coronavirus". I wasn't sick later on, but when I wanted to give blood, I was told that I had antibodies. Only then did I realise that I had picked up the virus in Korea. So, for quite a long time I had it on my CV that I had closed three countries.


FSB RACINGTEAM

Filip Čavić, student

Volim misliti da je devetka moj sretan broj. Od datuma rođenja, koji je 9. 9. '99., pa tijekom faksa i polaganja najtežih ispita na isti taj datum. Ove godine, na moj prijedlog, prihvaćen je broj koji će označavati našu formulu – nevjerojatnih devedeset devet. Formulu pratim odmalena kada me tata zarazio strašću prema Schumacheru i Ferrariju. Iako sam i dalje odan Ferrari *fan*, više volim našu studentsku formulu. Ta je ljubav dosegnula novu razinu kada sam ove godine izabran za voditelja FSB Racing teama i predsjednika Hrvatske studentske asocijacije strojarskih fakulteta (HSA-SF). Uz FSB Racing Team, član sam i u Udruzi inovatora FSB-a. Dosta volim rad s rukama jer smatram da kroz praktičan rad utemeljujemo sva teorijska znanja koja steknemo na fakultetu. Završni rad *Mobilno vozilo pogonjeno pneumatskim mišićima* odveo me na razna natjecanja, poput onoga u Tajvanu na kojem sam bio srebrni, a dobio sam i zlatnu nagradu od Inovacijskog saveza Saudijske Arabije.

FSB Racing Team je, sada već 21 godinu, član jedne od najvećih i najprestižnijih svjetskih organizacija – Formula Student, do kojega drži svako veće sveučilište u svijetu. Svake godine ispostavimo nešto fizikalno i opipljivo, a to je naša formula, koja je od 2019. električna. Na taj način pratimo sve aktualne trendove u autoindustriji. Oduševljava me što je to natjecanje postalo iznimno snažno, s velikom konkurencijom, pokazujući da se nešto tako uzbudljivo događa i u Lijepoj Našoj. Ove sam godine imao čast biti panelist na 1. Konferenciji udruga i zborova Sveučilišta u Zagrebu. Tom sam prilikom predstavio rad našeg tima i podijelio iskustva iz svijeta Formule Student. Reakcije su uvijek fascinantne: „Jeste li zaista vi, studenti, stvorili ovo?" Uvijek se volim našaliti da je naš tim strukturiran kao prava firma, osim što za to nismo plaćeni. Imamo strukturu: od voditelja tima, projekta, do tehničkih voditelja i podvoditelja, zaduženoga za svaki veći podsklop formule, što je od presudno za postizanje dobrih rezultata. Svjesni smo da je ključno ići izvan granica komfor-zone kako bismo se predstavili u najboljem svjetlu, što često znači ostati u garaži do sitnih sati uoči velikih natjecanja. Uostalom, sve što postignemo, ima pravi smisao tek kada to podijelimo s ostatkom svijeta.

Filip Čavić, student

I like to think that the number nine is my lucky charm. It started with my birth date on 9/9/99 and continued throughout my studies, including tackling the toughest exams on the same date. This year, at my suggestion, our formula was assigned the number 99 – the remarkable number ninety-nine. I hope it brings us a bit of luck. My fascination with Formula 1 dates back to my childhood, when my dad instilled in me a passion for Schumacher and Ferrari. Although I remain a loyal Ferrari fan, my heart now belongs to our student formula. This love reached a new level this year when I was elected head of the FSB (Faculty of Mechanical Engineering and Naval Architecture) Racing Team and president of the Croatian Student Association of Mechanical Faculties (HSA-SF). In addition to the FSB Racing Team, I am also a member of the FSB Innovators Association. I enjoy hands-on work and I believe that practical experience reinforces the theoretical knowledge gained during the studies. My thesis on "Mobile Vehicle Powered by Pneumatic Muscles" led me to various competitions, including winning silver in Taiwan and a gold award from the Innovation Alliance of Saudi Arabia.

For 21 years, the FSB Racing Team has been a proud member of the prestigious global organization "Formula Student", which includes all the world's major universities. Every year we produce something tangible, namely our formula, which has been electric since 2019, keeping abreast of current trends in the automotive industry. It thrills me that this competition has become incredibly strong, with significant competition, showcasing the excitement happening in our beautiful country. This year, I had the honor of being a panelist at the 1st Conference of Associations and Choirs of the University of Zagreb. At this event, I presented our team's work and shared experiences from the world of Formula Student. The reactions are always fascinating: "Did you, students, really create this?" I always joke that our team is structured like a real company, except we don't get paid for it. Our structure includes team leaders, project leaders, technical leaders and sub-leaders who are responsible for each major component of the formula, which is crucial for achieving excellent results. We realize that it is important to step out of our comfort zone in order to present ourselves in the best light, which often means staying in the garage until the early hours of the morning before major competitions. After all, everything we achieve only really makes sense when we share it with the rest of the world.

Tomislav Pukšec, izvanredni profesor

Tijekom studija pauzirao sam jednu godinu, ali to mi je neočekivano otvorilo priliku za putovanje! U moje vrijeme nismo imali ERASMUS u Hrvatskoj pa sam krenuo putovati s BEST-om (Board of European Students of Technology). Organizirani su bili razni seminari diljem Europe, i ja sam se prijavio. To me odvelo u Gdańsk na inženjersko natjecanje – iskustvo koje je ostavilo dubok trag. Provesti tjedan dana u dinamičnoj zajednici s kolegama studentima tehnoloških fakulteta, učenje i druženje, bilo je izuzetno pozitivno. Nakon povratka aktivno sam se uključio u udrugu, što je potaknulo moju strast za daljnjim putovanjem i istraživanjem. Tijekom te godine ne samo da sam putovao po cijeloj Europi nego sam sudjelovao i u organizaciji raznih tečajeva i događanja.

Na FSB-u sam nakon studija ostao skroz slučajno. Na zadnjoj godini faksa sam preko IAESTE-a (International Association for the Exchange of Students for Technical Experience) dobio praksu u AIRBUS-u u Njemačkoj. Posao je bio savršen: bio sam u odjelu koji je radio kontrolu kvalitete za zrakoplov A380, i to mi je bilo ostvarenje svih snova. Prilikom pisanja diplomskog rada dobio sam ponudu od profesora Duića koju jednostavno nisam mogao odbiti. Postao sam *Project Manager* prvog Intelligent Energy Europe projekta na FSB-u.

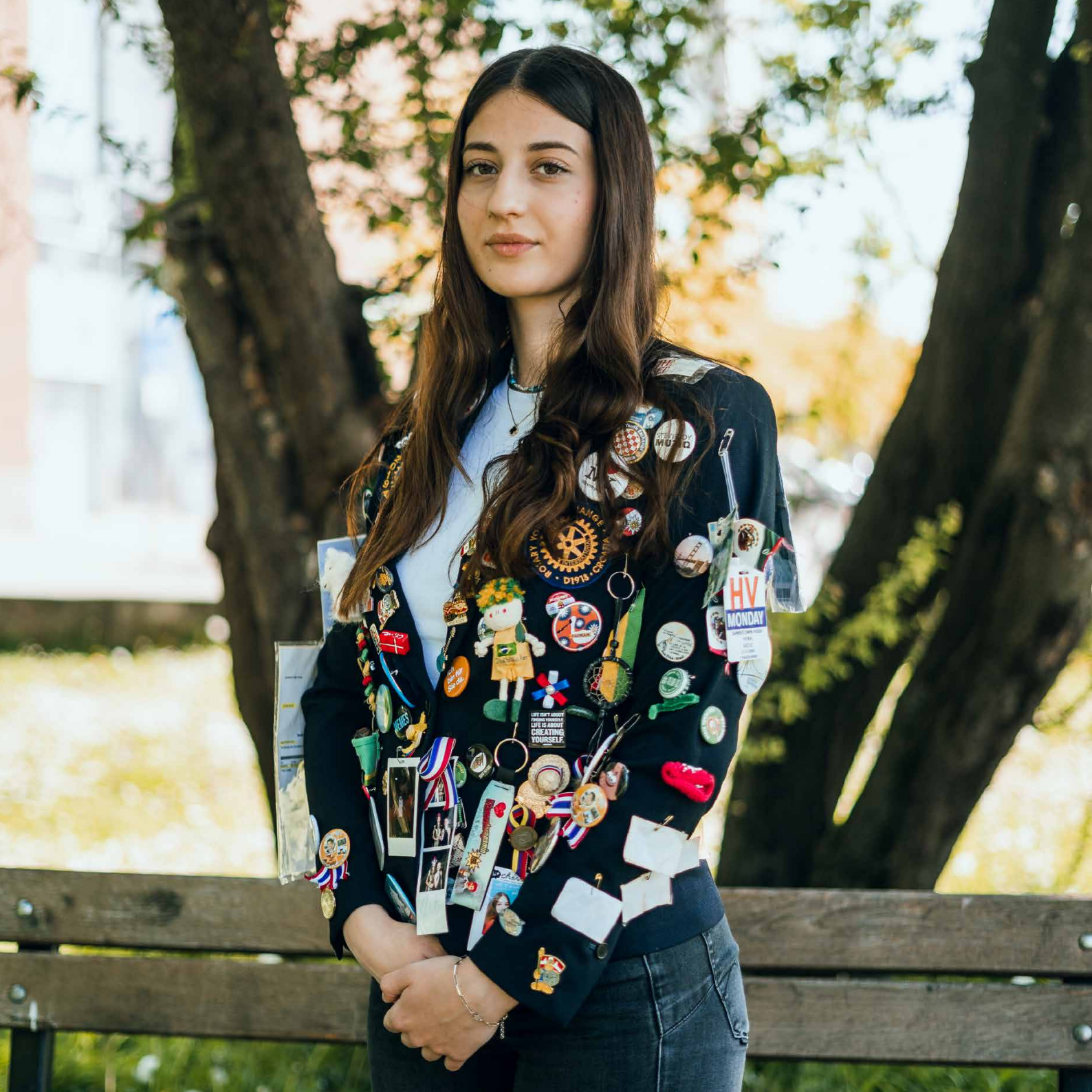
Ono što je bitno, i dalje se putuje, ali sad na svjetskoj razini, a značajan fokus stavljamo na EU projekte. Jedan od dosad najzanimljivijih projekata, gdje je FSB bio partner, bio je projekt koji se bavio energetskom učinkovitošću u zatvorima i kojem je cilj bila uspostava europske nagrade održivosti za zatvore. U Hrvatskoj smo radili s kaznionicom Lepoglava, koja je poznata po tome da su ondje najteži slučajevi, i s kaznionicom Požega, koja je jedina ženska kaznionica u Hrvatskoj. Trenutačno jedan od najizazovnijih projekta na kojem radimo je *Horizon Europe* projekt koji se bavi uspostavom i implementacijom New European Bauhaus koncepta, što je jedan od prioriteta Europske komisije. Iznimno je bitno privući mlade ljude na FSB, a EU projekti omogućuju upravo to. Omogućuju rad na zanimljivim i naprednim stvarima, potiču mlade znanstvenike. Smatram da je to izvrstan način da uključimo mlade ljude te da im damo da preuzmu određenu inicijativu i odgovornost, da putuju, da vide rješenja koja u Hrvatskoj možda nikad ne bi vidjeli, da se druže, da rastu. Ovo je bitno jer energetika je nešto što se stalno mijenja, a držati korak s promjenama je ključno.

Tomislav Pukšec, associate professor

I took a year off during my studies, but that unexpectedly opened an opportunity for me to travel! In my time, we didn't have ERASMUS in Croatia, so I started traveling with BEST (Board of European Students of Technology). Various seminars were organized all over Europe, and I signed up. This took me to Gdańsk for an engineering competition, an experience that left a deep mark. Spending a week in a dynamic community with fellow students of technological faculties, learning and socializing, was extremely positive. Upon my return, I became actively involved in the association, which fueled my passion for further travel and research. During that year, I not only traveled all over Europe, but also participated in the organization of various courses and events.

I stayed at FSB after my studies by accident. In my last year of college, I got an internship at AIRBUS in Germany through IAESTE (International Association for the Exchange of Students for Technical Experience). The job was perfect; I was in the department that did quality control for the A380 plane, and it was a dream come true. While writing my thesis, I received an offer from Professor Duić that I simply could not refuse. I became the Project Manager of the first Intelligent Energy Europe project at FSB.

What is important is that we still travel, but now on a global level, and we put a significant focus on EU projects. One of the most interesting projects ever, where the FSB was a partner, was a project that dealt with energy efficiency in prisons and which aimed to establish a European sustainability award for prisons. In Croatia, we worked with the Lepoglava penitentiary, which is known for having the most difficult cases there, and the Požega penitentiary, which is the only female penitentiary in Croatia. Currently, one of the most challenging projects we are working on is the Horizon Europe project, which deals with the establishment and implementation of the New European Bauhaus concept, which is one of the priorities of the European Commission. It is extremely important to attract young people to the FSB, and EU projects make it possible to do just that. They make it possible to work on interesting and advanced things, they encourage young scientists. I believe that this is an excellent way to involve young people and to let them take some initiative and responsibility, to travel, to see solutions that they might never see in Croatia, to socialize, to grow. This is important because energy is something that is constantly changing, and keeping up with the changes is crucial.


HV
MONDAY
LIFE ISN'T ABOUT
FINDING YOURSELF.
LIFE IS ABOUT
CREATING
YOURSELF.

Petra Sučić, studentica

U osnovnoj školi bavila sam se robotikom, a u srednjoj programiranjem. Iako sam se duže bavila programiranjem i imala mogućnost upisa na fakultet u Londonu, ipak sam se odlučila za strojarstvo u Zagrebu. Tata mi se bavi širokim spektrom strojarskih poslova i mislim da je to dosta utjecalo na moju odluku jer sam uz njega puno naučila i praktično radila, na primjer radili smo na konverziji auta u električni, napravili bateriju, ali sam u međuvremenu otišla u Ameriku, a tata je bateriju prodao. Onda mi je želja bila na mom Smartu napraviti vertikalna vrata, pa sam se i time bavila jedno vrijeme.

U srednjoj školi jako me zanimala razmjena učenika pa sam istraživala načine na koje bih mogla otići u neku drugu državu te tako došla do međunarodnog udruženja Rotary. Oni su mi omogućili jednogodišnje školovanje u Americi, na sjeverozapadu New Yorka, u Jamestownu. Bilo mi je odlično, ali je bilo jako stereotipično, dakle sve što se vidi na filmovima, tako je bilo u stvarnom životu. Bilo je grupica sportaša za jednim stolom, *football* tim je bio glavni, ali zanimljivo je što nismo imali *cheerleadersice* zato što ih je previše ostalo trudno jedne godine i morali su ih ukinuti.

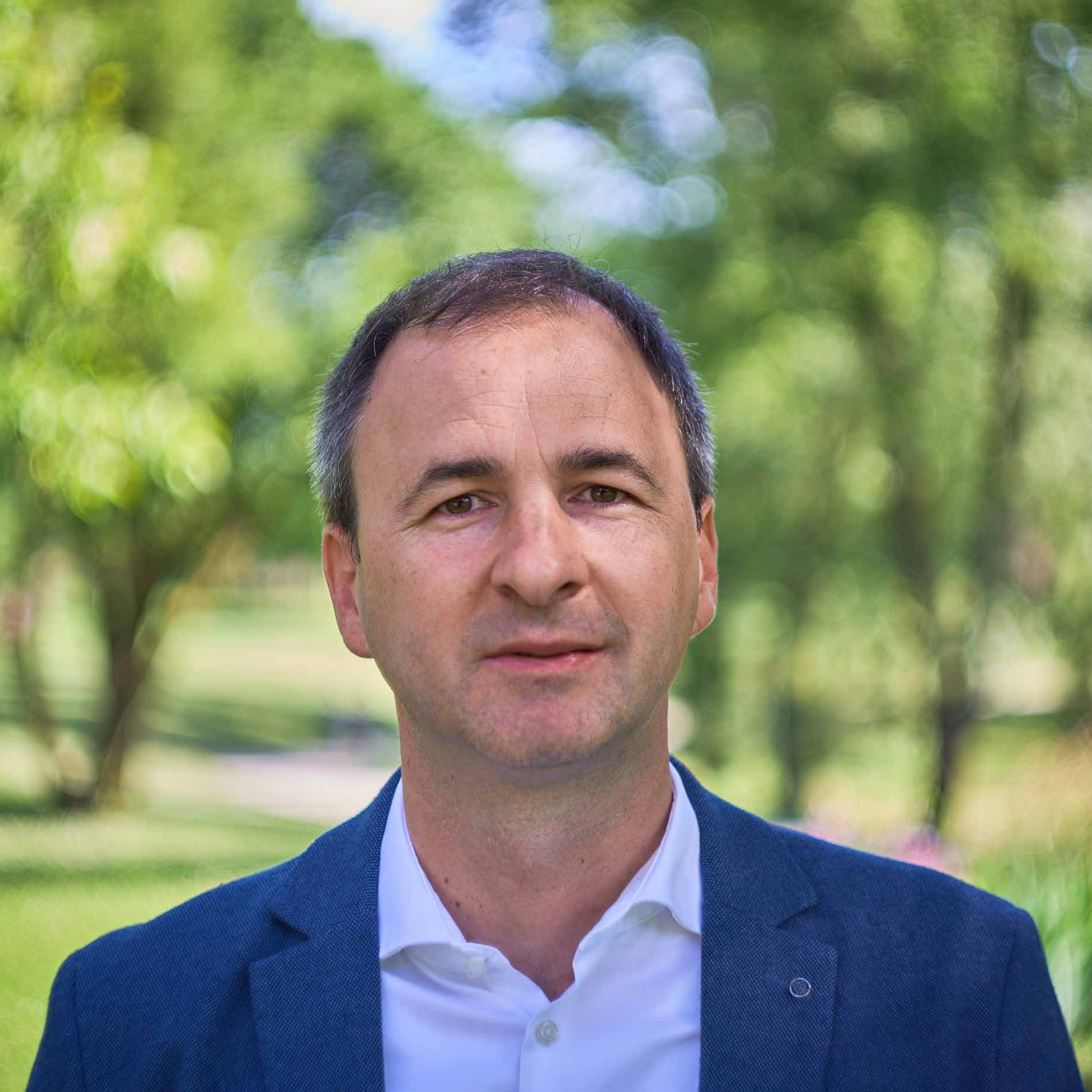
Bila sam u tri obitelji u tih godinu dana, što je tako organizirano kako bismo iskusili različite dinamike tamošnjeg života. Prva obitelj bila je velika obitelj: majka, otac i dvije kćeri (i brat koji je za vrijeme mog boravka bio na razmjeni u Sloveniji); u drugoj obitelji imala sam samo mamu, a treća obitelj bio je par bez djece. Sa svima sam ostala u dobrim odnosima i ne mogu reći koji su mi bili najdraži – u svakoj obitelji mi je bilo lijepo. Rotary je u planu i programu razmjene organizirao i nekoliko putovanja Amerikom, pa smo tako na par dana otišli u New York, a preko ljeta, kad nije bilo škole, u 30 dana obišli smo 27 saveznih država. Iako se čini kao puno aktivnosti u malo vremena, stvarno smo to vrijeme efektivno iskoristili i meni osobno ništa nije nedostajalo. Nakon povratka u Hrvatsku ostala sam volontirati u Rotaryju te sam danas predsjednica jednog Rotaract kluba. Organiziramo humanitarne turnire, radionice za mentalno zdravlje i sl. Na mjesečnoj bazi prikupljamo članarinu i donacije, koje onda doniramo, a ja se trudim da za vrijeme ovog mog mandata te donacije idu direktno potrebitima, a ne preko raznoraznih udruga. Stalno pozivam i druge da se priključe jer je stvarno dobra atmosfera, imamo puno druženja i zaista ispunjujućeg sadržaja.

Petra Sučić, student

I studied robotics in elementary school, and programming in high school. Despite my long programming experience and the option of enrolling in a university in London, I decided to study mechanical engineering in Zagreb. My dad works on a wide range of mechanical projects, and I think it had a great influence on my decision because I learned a lot from him and got hands-on experience, for example, we worked on turning an IC car into an electric one. We made a battery for it, but my dad sold the battery when I went to America. Then I wanted to make a vertical door on my Smart, so I worked on that for a while.

In high school, I was really interested in student exchange, so I looked for opportunities to go to another country, and that's how I found out about the International Rotary Association. They enabled me to spend a year studying in Jamestown, New York, in America. It was great for me, though, it was very stereotypical, so everything you see in the movies was what I experienced in real life. There were groups of athletes at one table, the football team was the dominant one, but it's interesting to note that we didn't have cheerleaders because too many of them got pregnant in one year and they had to disband them.

I lived with three families that year, so we could experience the different dynamics of life there. The first family was large, mother, father, and two daughters (and a brother who was studying in Slovenia during my stay), in the second family I had only my "mother", and the third family was a couple without children. I remained on good terms with all of them and I can't say which was my favorite, I had a good time with them all. As part of the exchange plan and program, Rotary also organized several trips across America, so we went to New York for a couple of days, and during the summer, when there was no school, we visited 27 federal states in 30 days. Although it seemed like there were a lot of activities in a short time, we used that time effectively and I did not feel like I missed anything. After returning to Croatia, I continued volunteering in Rotary and today I am the president of a Rotaract club. We organize humanitarian tournaments, workshops for mental health, and other events. Every month, we collect membership fees and donations, which we then donate. Throughout my mandate, I try to ensure that these donations go directly to the needy, and not through various associations. I repeatedly invite others to join, because of a good atmosphere, lots of socializing and fulfilling activities.



Ivan Stojanović, izvanredni profesor

Bio sam izviđač od malih nogu pa sve do stalnog zaposlenja. Sjećanja na ta vremena su mi dragocjena i obilježena putovanjima diljem svijeta – od Italije, Nizozemske, Engleske, Francuske, pa sve do Čilea. Sudjelovao sam u brojnim logorovanjima, natjecanjima i smotrama te sam na nekima često bio organizator. Kroz ta iskustva stekao sam raznovrsne vještine: od snalaženja u prirodi, signalizacije, podizanja šatora, paljenja vatre, do čvorologije, topografije i slično. Ljeta sam redovito provodio na izviđačkim logorovanjima na Fratarskom otoku kraj Pule. Vjerujem da me je to iskustvo oblikovalo kao osobu. Posebno mi je u sjećanju ostala Svjetska skautska smotra 1998./1999. u Čileu, gdje smo dočekali i Novu godinu. Sudjelovalo je čak 34 000 izviđača iz cijelog svijeta. No, ono što je najvažnije od svega zapravo su ljudi koje sam upoznao kroz ta iskustva. Danas ih s ponosom mogu zvati prijateljima. U izviđačima sam obnašao različite dužnosti, a u radu s djecom i mladima stekao sam odgojne i obrazovne vještine. Te iste vještine sada primjenjujem u radu na Fakultetu, gdje obavljam više uloga. Jedna od njih je pozicija izvanrednog profesora na Katedri za zaštitu materijala, a moja je specijalnost zaštita od korozije premazima.

Osim toga, voditelj sam Laboratorija za zaštitu materijala, uključen sam u znanstvenoistraživački rad i otvoren za suradnju s industrijom. Dinamika naše katedre podrazumijeva blisku suradnju s raznim tvrtkama – od ispitivanja, EU projekata do uvođenja novih tehnologija. U području korozije u Hrvatskoj naša katedra gotovo pa prednjači. Isto tako koristimo svaku priliku da uključimo studente u rad. Terenska je nastava neprocjenjiva jer, razgovarajući s ljudima, uvijek naučimo nešto novo i steknemo uvid u praksu. To također otvara mogućnosti za zapošljavanje naših studenata budući da mnoge tvrtke traže preporuke upravo iz naše institucije.

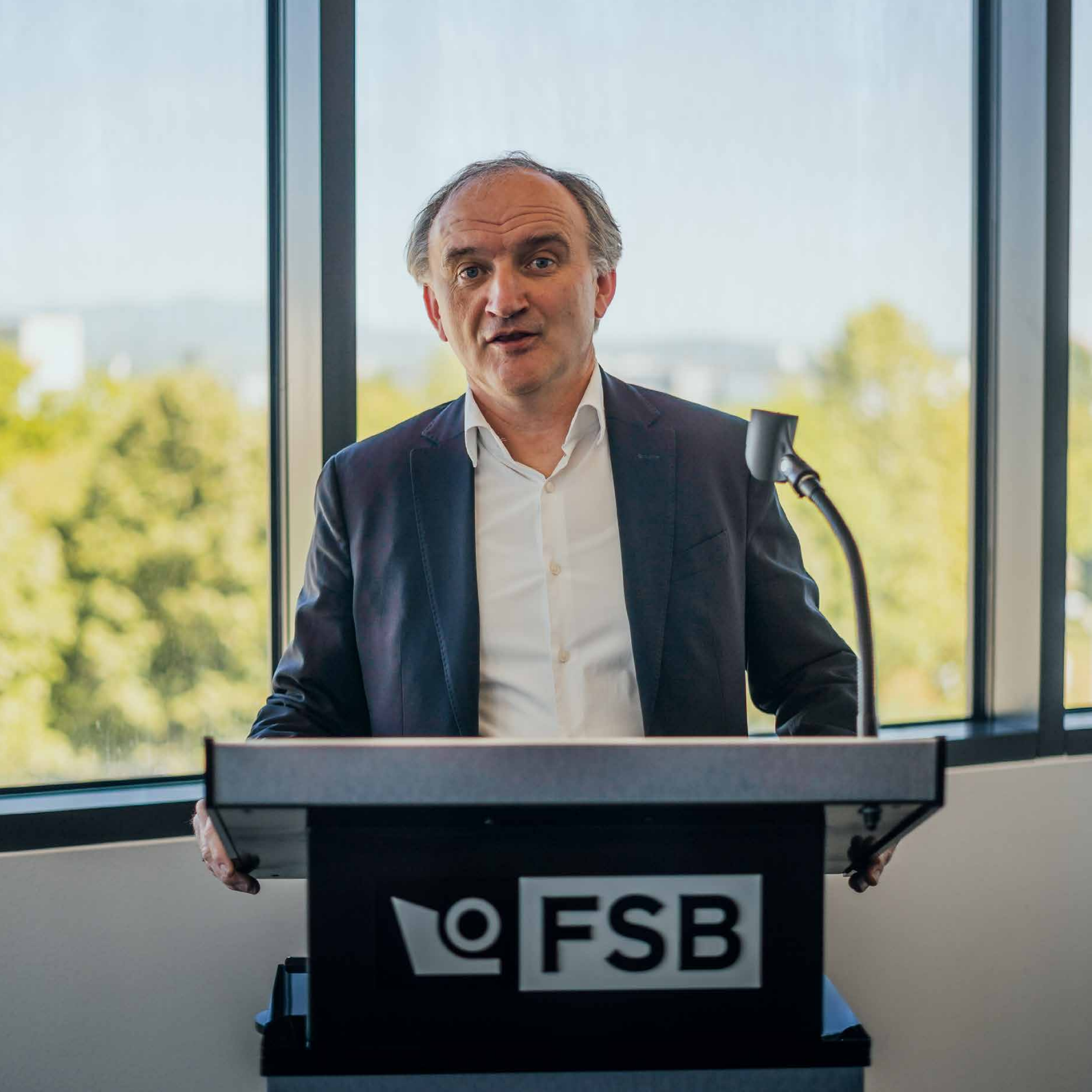
Tijekom godina vodio sam različite aktivnosti, no najviše me veseli suradnja sa školama jer volim otvarati vrata mladim naraštajima i poticati buduće studente da istraže naš Fakultet i upišu se na njega. U POJ-u puno radimo na promicanju Fakulteta: organiziramo posjete Fakultetu, obilaske laboratorija i prezentacije, a u zadnje vrijeme sve više odlazimo u škole. Moj radni dan obuhvaća raznolike aktivnosti, ali uživam u svakom trenutku.

Ivan Stojanović, associate professor

I was a boy scout from an early age until I got a full-time job. The memories of those times are precious to me and include trips around the world – from Italy, Holland, England, and France, all the way to Chile. I participated in numerous camps, competitions and scout jamborees, and I was often an organizer of some of them. Through these experiences, I acquired a variety of skills – from natural navigation, signalling, pitching tents, lighting a fire, knot tying, topography, and the like. I regularly spent my summers at scout camps on Fratarski Island near Pula. I believe that experience shaped me as a person. I especially remember the 1998/99 World Scout Jamboree in Chile, where we celebrated the New Year's Eve. As many as 34,000 scouts from all over the world participated. But what is most important are the people I met on these occasions. Today I can proudly call them friends. I held various positions in the scouts, and I gained educational skills in working with children and young people. I now apply these same skills in my work at the university, where I perform multiple roles. One of them is the position of associate professor at the Chair of Materials Protection, and my specialty is corrosion protection with coatings.

Furthermore, I am the Head of the Laboratory of Materials Protection, involved in scientific research, and open to collaborating with industry. The dynamics of our Chair implies close cooperation with various companies in a variety of activities, from testing to EU projects and the introduction of new technologies. In Croatia, our Chair is virtually at the forefront of corrosion protection. We also use every opportunity to involve students in the work. Field teaching is invaluable because through conversations with professionals we always learn something new and gain insight into the practice. This also opens up opportunities for employment of our students as many companies seek referrals from our institution.

Over the years, I have been in charge of various activities, but I am most happy with the cooperation with schools because I like to open doors to younger generations and encourage future students to explore and enroll at our faculty. In POJ, we work a lot on the promotion of the Faculty. We organize visits to the Faculty, laboratory tours and presentations, and lately, we have been visiting schools more frequently. My working day includes a variety of activities, but I enjoy every moment of it.


FSB

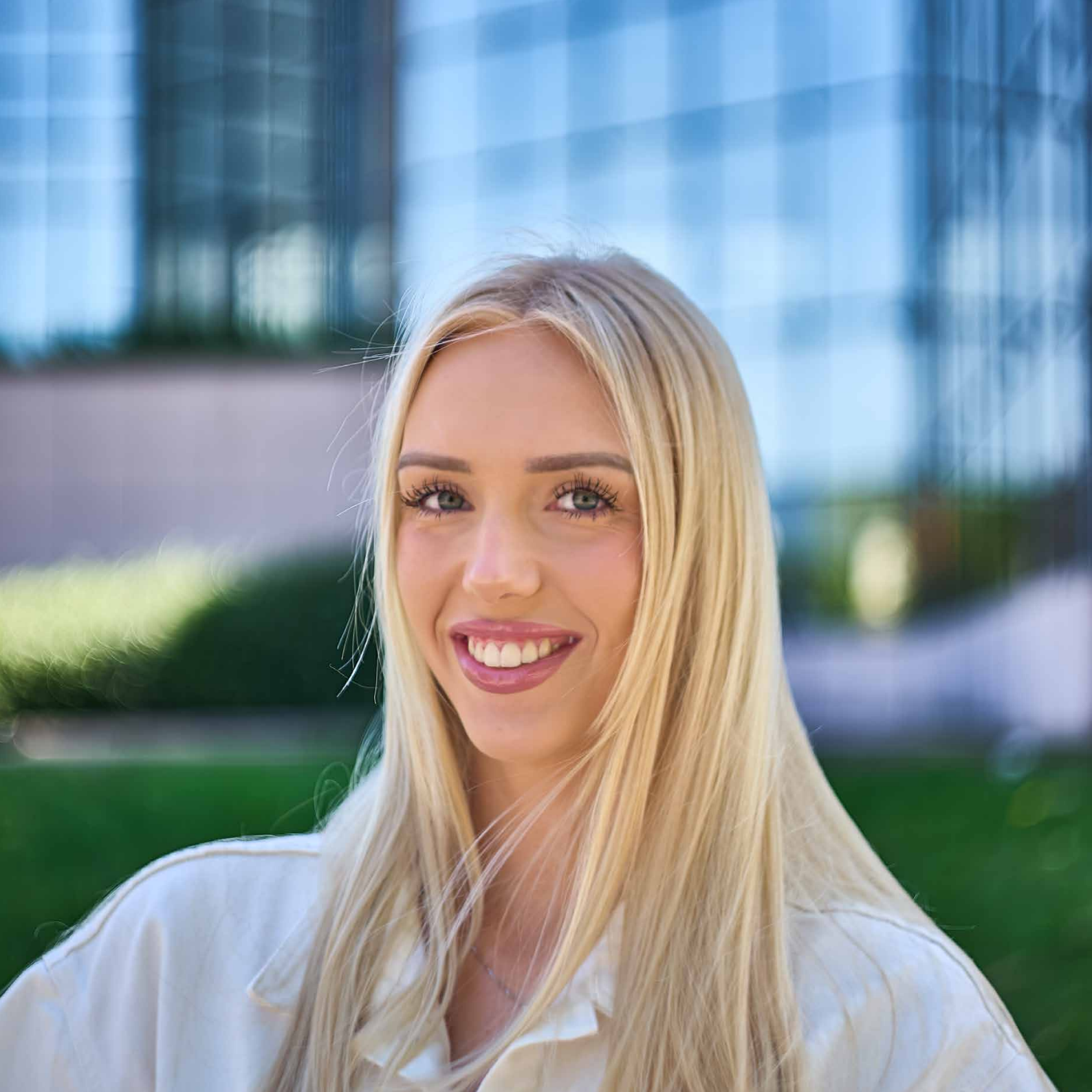
Zdenko Tonković, dekan

Prije nego što sam postao dekan, bio sam na mjestu prodekana, a prije toga vodio sam Povjerenstvo za kadrove, koje je jedno od najbitnijih povjerenstva na Fakultetu. Kroz tu su me funkciju ostali zaposlenici imali priliku bolje upoznati. Dok sam bio prodekan, Fakultet je, osim katastarskih čestica južne, sjeverne i istočne zgrade, imao i dosta čestica istočno od južne zgrade, koje su bile namijenjene za Fakultet, ali su ondje već bile izgrađene zgrade i postupno je nestajalo fakultetsko vlasništvo. Fakultet je dobivao opomene da treba održavati taj prostor na kojem je izrasla šuma i visoka trava, a okolni stanari napravili su sjenice, barake i parkinge. Bilo je samo pitanje vremena kada će Fakultet u potpunosti ostati i bez te čestice. Država je u nekom trenutku upisala pravo vlasništva u zemljišnim knjigama, a Fakultet je i dalje u katastru ostao upisan, ali samo za mali dio – za jednu česticu od 2000 m^2 i za još jednu česticu od približno 420 m^2. Ta čestica od 2000 kvadrata mi je oduvijek bila posebno važna radi potencijala koji nudi. Kao prodekan, htio sam da naša uprava to uspije riješiti u našu korist, ali nismo uspjeli. Međutim, kad je došla obnova Fakulteta, prodekan Karšaj i ja došli smo na ideju da je sada jedinstvena šansa vratiti tu česticu. Non-stop sam pričao o toj čestici i idejama koje imamo za nju. Na početku našeg mandata otišli smo u Ministarstvo prostornog uređenja, graditeljstva i državne imovine i ispričali stvar – da se mi sada selimo i trebamo napustiti prostor Fakulteta, a imamo akreditirane laboratorije koji trebaju imati kontrolirane uvjete za normalan rad. Ministarstvo je uvidjelo naše potrebe i dalo nam tu česticu na upotrebu, ali samo za trajanja obnove. Najveći problemi, naravno, nastanu kada nešto dobijete: naime, morali smo riješiti probleme s izgrađenim barakama, sjenicama, ogradama i parkirnim mjestima izgrađenima na toj čestici. Na kraju smo uspjeli u naumu i na toj čestici izgradili modularnu prizemnu zgradu površine 720 kvadrata. Do lipnja prošle godine napravili smo projekt i iskoristili novac od Europske unije, tako da Fakultet nije snosio troškove za izgradnju, zbog čega smo kao Uprava jako ponosni.

Nadamo se da ćemo na tu česticu, koja bi jednog dana trebala poslužiti za proširenje fakultetske infrastrukture, sada, dok još nemamo rješenje za neku fiksnu građevinu, uspjeti staviti još dvije etaže i širiti dobru priču za studente i za naš Centar za transfer tehnologije, gdje će se osnivati *startupovi* i ostvarivati suradnja s drugim fakultetima.

Zdenko Tonković, Dean

Before I became dean, I was vice dean, and before that I headed the personnel committee, which is one of the most important committees at the Faculty. Through this role, other faculty employees had the opportunity to get to know me better. While I was vice dean, in addition to the cadastral parcels of the southern, northern and eastern buildings, the Faculty also had many parcels east of the southern building. However, buildings had already been built there and the Faculty's property gradually disappeared. The Faculty was receiving warnings to maintain the area where the forest and tall grass grew, while the surrounding tenants had built gazebos, sheds and parking lots. It was only a matter of time before the Faculty would lose that parcel too. At some point, the state registered the right of ownership in the land register, and the Faculty remained registered in the cadastre, but only for a small part – for one plot of 2,000 m^2 and another plot of approximately 420 m^2. The 2,000 m^2 plot has always been particularly important to me because of the potential it offers. As vice dean, I wanted our administration to secure it, but we failed. However, when the renovation of the Faculty began, Vice Dean Karšaj and I came up with the idea that now was a unique chance to reclaim that plot. I had been talking non-stop about that plot and the ideas we had for it. At the beginning of our mandate, we went to the Ministry of Physical Planning, Construction and State Assets and explained the matter – that we needed to vacate the Faculty premises and that we had accredited laboratories that required controlled conditions for normal work. The Ministry recognised our needs and granted us that plot for use, but only for the duration of the renovation. As a rule, the biggest problems arise when you are given something. We received the parcel and had to deal with the problems of the shacks, gazebos, fences and parking spaces built on that plot. In the end, we succeeded in our plan and built a 720 m^2 modular one-story building there. By June of last year, we completed a project funded by the European Union so that the Faculty did not bear the construction costs, of which we, as the faculty administration, are very proud. However, in the meantime, we hope to be able to add two more floors to the current structure and put it to good use for our students and our Technology Transfer Centre, where new startups will be formed, and collaborations with other faculties will take place.



Lea Perković, studentica

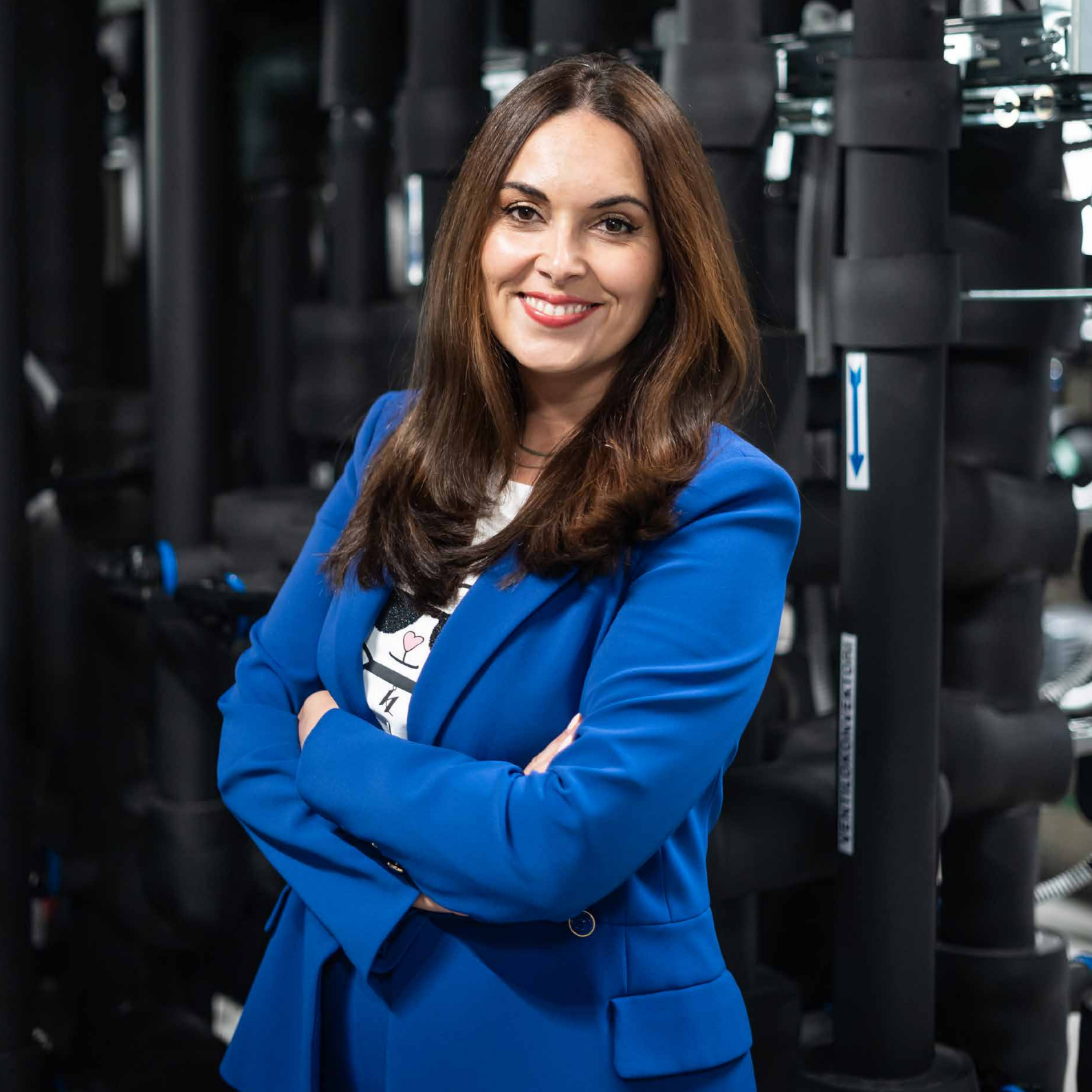
U tom trenutku, koji mi se činio kao vječnost, postojale su samo dvije mogućnosti: ili će prozvati moje ime ili će sav moj trud biti uzaludan. Neizvjesnosti je došao kraj kada sam čula svoje ime i postala Miss Beauty Hrvatske 2024. godine. Od malih nogu bila sam povezana s modelingom putem jedne agenciju, ali tijekom osnovne i srednje škole veći dio svog vremena posvetila sam treninzima plivanja i drugim športovima. Jednog dana kontaktirala me suorganizatorica Miss Beauty Zagreba i Zagrebačke županije te glavnog izbora za cijelu Hrvatsku. Smatrala sam da nemam što izgubiti i odlučila sam se prijaviti. Prošla sam *casting* i osvojila titulu prve pratilje na izboru za Miss Zagreba i Zagrebačke županije, što me plasiralo na nacionalni izbor, gdje sam osvojila sadašnju titulu. Pripreme za izbor bile su uzbudljive, ali i izazovne. Oduvijek sam voljela svijet ljepote, a posebnu strast gajila sam prema radu na noktima. Nakon srednje škole završila sam dvije edukacije za nokte i otvorila svoj salon.

Balansiranje fakultetskih obaveza i svijeta ljepote ponekad je izazovno, no ne mogu se odreći niti jednog. Oba moja posla su dosta fleksibilna, što mi daje prostora za dobru organizaciju vremena. Uglavnom sve ostalo podlažem predavanjima na faksu. Ljudi me često pitaju: „Kako povezuješ strojarstvo i svijet ljepote?" Upravo zbog te različitosti našla sam se na smjeru industrijskog inženjerstva i menadžmenta jer spaja sve moje interese. Ono što sam kroz ovo iskustvo naučila jest da se cijeni različitost. U svijetu opsjednutom kalupima i nametnutim standardima ljepote, često zaboravljamo što se krije iza lijepog lica. Mislim da je upravo ta nepovezanost modelinga i FSB-a zaintrigirala ljude i pokazala da postoji više slojeva kod osobe. Kako piše u jednom članku: „Dvadesetjednogodišnjakinja iz Samobora, studentica Fakulteta strojarstva i brodogradnje Sveučilišta u Zagrebu, što je poprilično rijedak slučaj za natjecateljicu na izborima ljepote." Ova neobična kombinacija pokazuje da ljepota nije samo u odjeći i šminki te da se stigma oko svijeta ljepote polako, ali sigurno iskorjenjuje. Kroz ovo iskustvo naučila sam da kada nešto radite iz srca, rezultati će uvijek doći. Najvažnije od svega, ne trebamo se bojati iskakati iz mase samo zato što društvo smatra da to nije uobičajeno. Upravo su različitost i autentičnost one kvalitete koje nas čine posebnima.

Lea Perković, student

At that moment, which seemed like an eternity, there were only two possibilities: either they would call my name, or all my efforts would be in vain. The uncertainty came to an end when I heard my name called and became Miss Beauty Croatia 2024, I was associated with modeling at a young age through an agency, but throughout primary and secondary school I devoted most of my time to swimming training and other sports. One day I was contacted by the co-organizer of Miss Beauty Zagreb and Zagreb County and the main pageant for the whole of Croatia. I thought I had nothing to lose and decided to apply. I passed the casting and won the title of runner-up in the contest for Miss Zagreb and Zagreb County contest, which qualified me for the national competition, where I won the current title. Preparing for the competition was exciting, but also a challenge. I have always loved the world of beauty and my passion was nail work. After high school, I completed two nail courses and opened my own nail salon.

Balancing between university duties and the world of beauty is sometimes a challenge, but I can't give up either. Both of my jobs are quite flexible, which gives me the opportunity to organise my time well. I organise everything else largely around the lectures at the university. People often ask me: "How do you combine mechanical engineering and the world of beauty?" It was precisely because of this diversity that I chose Industrial Engineering and Management degree program because it combines all my interests. In the future, What I have learnt through this experience is to value diversity. In a world obsessed with body shapes and imposed beauty standards, we often forget what is hidden behind a beautiful face. I think it was this discrepancy between modeling and FSB that intrigued people and showed that there are more layers to a person. As one article states: "A twenty-one-year-old woman from Samobor, a student at the Faculty of Mechanical Engineering and Naval Architecture at the University of Zagreb, which is quite a rare case for a contestant in beauty contests." This unusual combination shows that beauty isn't just about clothes and make-up and that the stigma around the world of beauty is slowly but surely being eradicated. Through this experience, I've learnt that when you do something from the heart, the results will always come. Most importantly, we shouldn't be afraid to stand out from the crowd just because society thinks it's out of the ordinary. Diversity and authenticity are the qualities that make us special.



Tea Žakula, izvanredna profesorica

Još u osnovnoj školi otkrila sam svoju strast prema strojarstvu i odlučila sam postati strojarka, inspirirana svojim ocem. Voljela sam graditi i smišljati nove stvari. Sjećam se kako sam organizirala čišćenje zajedničkog prostora u zgradi, okupljajući djecu iz susjedstva da riješimo problem s prljavim okolišem. U osnovnoj školi pokrenula sam školske novine Puh te napisala dječju predstavu koju smo u konačnici i izveli u vinkovačkom gradskom kazalištu. Takvih dječjih projekata bilo je puno i taj produktivni duh prati me cijeli život.

Tijekom studentskih dana paralelno sam živjela dvije velike strasti: folklor i strojarstvo. Ljubav prema folkloru prenijela mi je mama; počela je već u ranom djetinjstvu, a tijekom godina razvila se u pravu strast. Satima sam provodila na plesnim probama. No, unatoč svom tom vremenu posvećenom folkloru, nikada nisam zapostavila svoje akademske obveze. Došao je, međutim, trenutak kada je postalo jasno da se moram odlučiti: nastaviti se intenzivno baviti folklorom ili se potpuno posvetiti strojarstvu. Izbor nije bio lagan. Nakon mnogo razmišljanja odlučila sam se za strojarstvo. Završila sam doktorat na prestižnom Massachusetts Institute of Technology (MIT). Prilagodba na američki obrazovni sustav bila je izazovna i znatno teža od prijelaza iz gimnazije na fakultet. Već na samom početku primijetila sam da mnogi studenti MIT-a, uključujući i mene, osjećaju „impostor sindrom" – osjećaj da možda ne zaslužujemo biti ondje gdje jesmo, unatoč evidentnim postignućima.

Tijekom studija u Americi redovito sam pratila Facebook stranicu *Humans of New York*. Fascinirale su me tople i zanimljive priče ljudi s kojima se svakodnevno susrećemo, a koji iza sebe imaju inspirirajuće i snažne životne priče. Kada sam se vratila iz Amerike, primijetila sam da sam izgubila vezu s ljudima na Fakultetu strojarstva i brodogradnje (FSB). Htjela sam da se studenti i profesori na FSB-u vide ne samo kao prolaznici u hodnicima nego kao pojedinci s jedinstvenim pričama koje zaslužuju biti ispričane. Zato sam pokrenula projekt *Humans of FSB*.

Moj povratak u Hrvatsku bio je vođen željom za životom u kulturi koja mi odgovara. Moj je cilj na FSB-u doprinijeti stvaranju svojevrsnog „mini MIT-a" – okružja koje potiče inovacije, kreativnost i praktično učenje. Želim da naš fakultet bude mjesto gdje studenti ne samo da uče o teoriji, već i primjenjuju znanje za rješavanje najsloženijih problema i rad na realnim projektima.

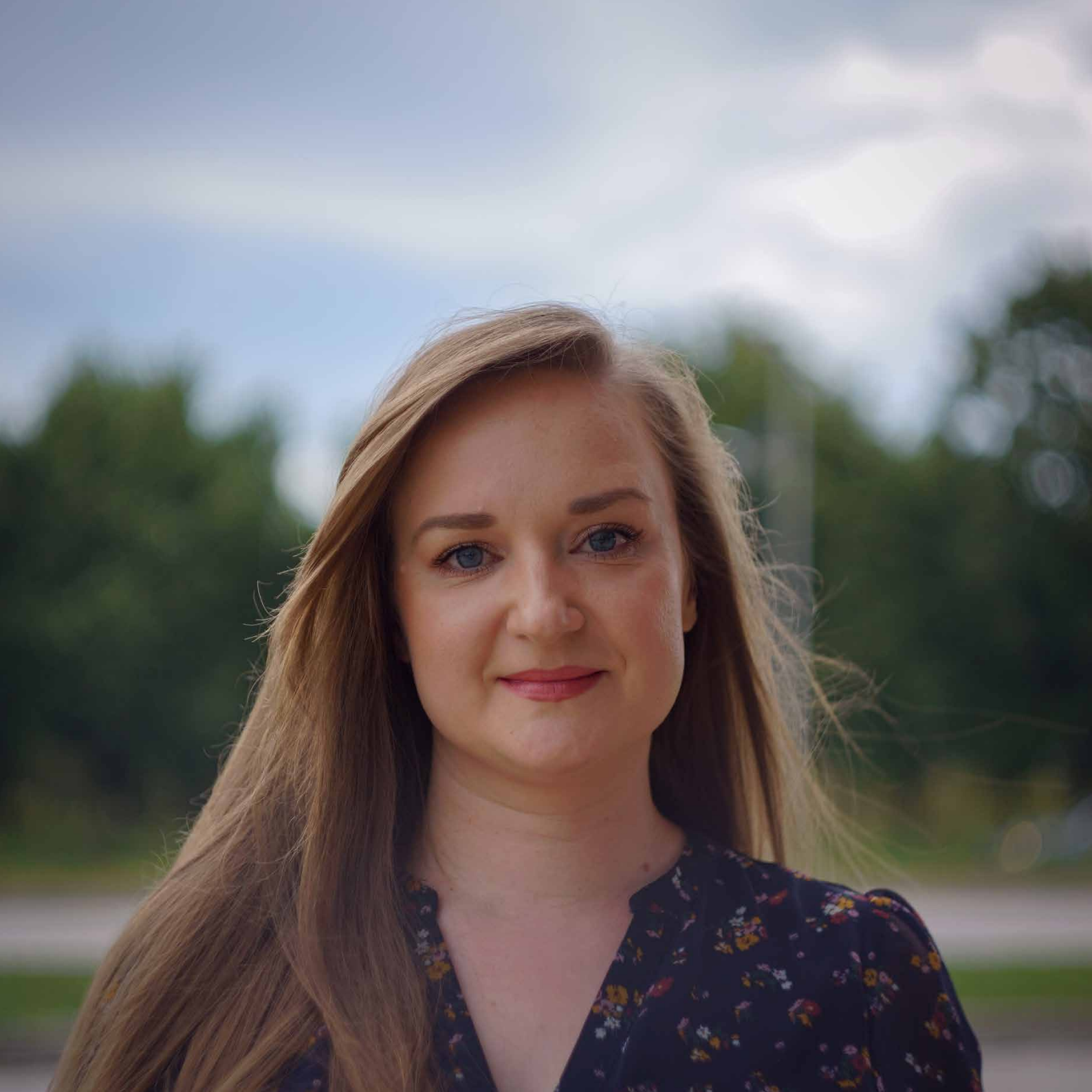
Tea Žakula, associate professor

From a young age, I was determined to become a mechanical engineer, inspired by my father. I loved building things and coming up with new ideas. I remember organizing the cleanup of the common area in our building, gathering neighborhood kids to tackle the issue of a dirty environment. In elementary school, I started the school newspaper "Puh" and wrote a children's play, which we eventually performed at the City Theater in Vinkovci. There were many such childhood projects, and that productive spirit has followed me throughout my life.

During my student days, I managed to balance two great passions – folklore and mechanical engineering. My love for folklore was passed down by my mother from an early age and has grown into a true passion over the years. I spent countless hours at dance rehearsals. Despite all the time dedicated to folklore, I never neglected my academic responsibilities. But there came a time when it became clear that I had to choose – continue with intense involvement in folklore or fully commit to mechanical engineering. The choice was not easy. I gave it a lot of thought before deciding on mechanical engineering. I completed my Ph.D. at the prestigious Massachusetts Institute of Technology (MIT). Adapting to the American educational system was challenging and significantly harder than transitioning from high school to university. From the very start, I noticed that many MIT students, including myself, experienced "impostor syndrome" – the feeling that we might not deserve our current position despite our evident achievements.

During my studies in America, I regularly followed the Facebook page "Humans of New York." I was captivated by the warm and intriguing stories of everyday people, who had inspiring and powerful life stories behind them. When I returned from America, I noticed that I had lost touch with the people at the Faculty of Mechanical Engineering and Naval Architecture (FSB). I wanted the students and professors at FSB to see each other not just as passers-by in the hallways, but as individuals with unique stories that deserved to be told. This led me to start the project "Humans of FSB."

My return to Croatia was driven by the wish to live in a culture that suits me. My goal at FSB is to help create a kind of "mini MIT" – an environment that fosters innovation, creativity, and practical learning. I want our faculty to be a place where students in addition to learning theory can apply their knowledge to solve complex problems and work on real-world projects.



Marija Gudan, savjetnica

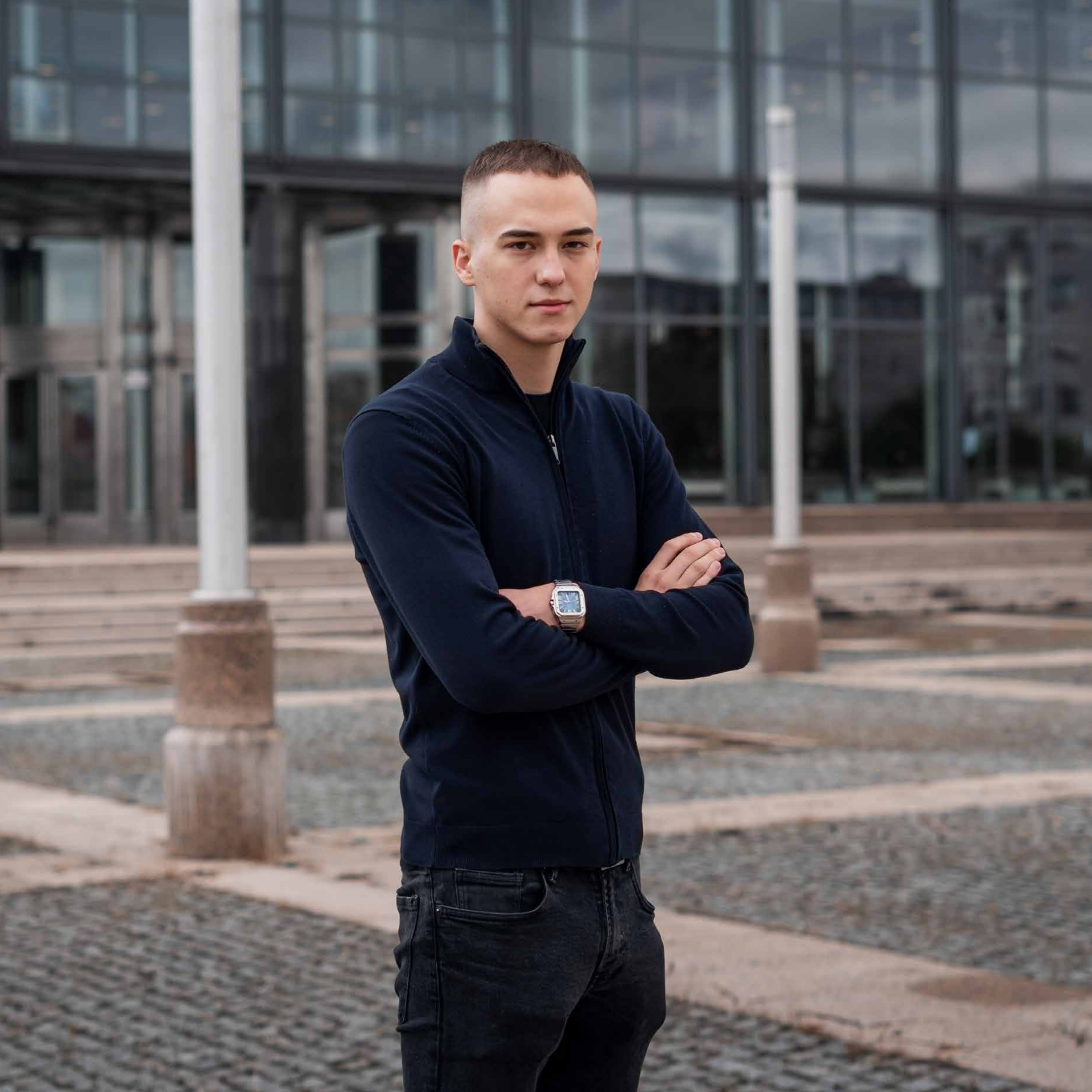
Odmalena sam govorila kako ću biti nastavnica, i to je po meni trebalo tako biti. Na to me inspirirala moja učiteljica engleskog jezika iz osnovne škole. Ona je i razlog zašto sam zavoljela jezike i zašto sam ih odlučila studirati kada je došlo vrijeme odabira fakulteta. Završila sam francuski jezik i književnost, nastavnički smjer, te poljski jezik i književnost, književno- kulturološki smjer, na Filozofskom fakultetu Sveučilišta u Zagrebu. Život me ipak odveo u posve drugom, nepredvidljivom smjeru. Nakon završetka fakulteta zaposlila sam se preko mjere stručnog osposobljavanja za rad bez zasnivanja radnog odnosa u Ministarstvu unutarnjih poslova. Tu je krenuo moj put u svijet projekata. Bavila sam se raspisivanjem natječaja, odobravanjem i kontrolom projekata. Paralelno s tim, radila sam kao nastavnica francuskog jezika u Francuskoj alijansi i jedan period u V. gimnaziji. To je bilo predivno iskustvo koje je ispunilo sve moje dječje želje da postanem nastavnica. Kao najposebniji trenutak svoje karijere izdvojila bih onaj kada sam se nakon Zavoda zaposlila na Filozofskom fakultetu i srela svoju bivšu učenicu iz V. gimnazije koja se upisala na francuski jezik, nastavnički smjer.

Na kraju cijelog tog zamršenog puta odlučila sam ostati u projektima. Ono što me tu najviše privlači jest dinamičnost posla. Svaki projekt je drukčiji i autentičan. Svaki projekt omogućuje studentima bolje sutra i ponosna sam što sudjelujem u toj promjeni, makar kao mali kotačić. Iako možda ne direktno, osjećam povezanost s mladima i to da moj rad ima nekakvu korist. To je valjda ta nastavnica u meni. Često putujem na dva kotača kao „profesionalni suvozač", i tu iskorištavam priliku da posjetim druge države i upotrijebim svoje jezične sposobnosti. Kada sam se upisala na polonistiku, profesori su me „navukli" na knjige poznatih poljskih autora i jedva sam čekala otići u Poljsku kako bih iskusila sve o čemu su mi profesori pričali. Na Erasmus mobilnosti u Poljskoj upisala sam se i na portugalski jezik. Svaki sljedeći jezik koji učim postaje lakši, a nadam se da će njihov broj samo rasti, jer upravo poznavanje jezika obogaćuje moj život. Možda će ova moja priča inspirirati nekoga da se oslobodi svojih ograničenja jer su mogućnosti svakog studenta stvarno beskonačne. Veliki ste pokretač promjena u društvu i iskoristite svaki dobar uzor u svome životu za postizanje bolje budućnosti.

Marija Gudan, advisor

Ever since I was little. I've always said that I wanted to be a teacher, and in my opinion, that's the way it should be. My English teacher from primary school inspired me to do so. She is also the reason why I fell in love with languages and why I decided to study languages when it was time to choose a university. I graduated from the Faculty of Humanities and Social Sciences in Zagreb with two major graduate programmes. One in French language and literature with a major in teaching and the other in Polish language and literature with a major in literature and cultural studies. But life took me in a completely different, unpredictable direction. After graduating from university, I got a job at the Ministry of the Interior through the vocational training programme for employment without a job offer. That's where my journey into the world of projects began. I was involved in tendering, authorisation and monitoring of projects. At the same time, I worked as a French teacher in the French Alliance and for a while in the Vth Gymnasium. It was a wonderful experience that fulfilled all my childhood dreams of becoming a teacher. I would highlight the best moment of my career as the moment when I got a job at the Faculty of Humanities and Social Sciences after the employment at the Employment Service and met my former student from the Vth Gymnasium, who enrolled French under my influence.

At the end of this whole complicated path, I decided to stay in the projects. What appeals to me most is the dynamic nature of the work. Each project enables a better future for students and I am proud to be a part of that change, even if I am just a small cog. Although maybe not directly, I feel connected to young people and feel that my work has a purpose. I guess that's the teacher in me. As a "professional co-driver", I'm often out and about on two wheels. I take the opportunity to visit other countries and use my language skills. When I enrolled in Polish, teachers got me "hooked" on books by famous Polish authors and I couldn't wait to go to Poland to experience everything they told me about. During my Erasmus stay in Poland, I also enrolled in Portuguese. Every language I learn is easier for me and I hope to learn more and more, because knowing languages enriches my life. Maybe this story of mine will inspire someone to overcome from their limitations because the possibilities of every student are truly infinite. You are a great driver of change in society and use every good role model in your life to achieve a better future.



Niko Vrgoč, student

Od osnovne škole privlačilo me inženjerstvo. Kao mali rastavljao sam autiće, a u srednjoj školi konstantno sam s nekoliko prijatelja tražio neki projekt na kojem možemo raditi. Profesori su nam zadavali zadatke, a škola sufinancirala dijelove koji su nam bili potrebni, pa smo tako jedne godine složili CNC stroj s kojim smo išli na World Skills Croatia natjecanje i osvojili prvo mjesto. Taj se stroj dandanas koristi za praksu u srednjim školama! Osim toga, još smo napravili robotsku ruku i fotobrod, brod koji ima podvodnu kameru i snima.

Prijatelj me nagovarao da mu se priključim u igranju igrica simulatora trkaćih igara. Dugo sam se opirao jer u ponudi na tržištu nisam mogao pronaći volan koji mi je bio dovoljno dobar pa mi je prijatelj rekao da napravim svoj. Tako sam sate i sate proveo u CAD programu pokušavajući konstruirati idealan volan te sam pomoću svog 3D printera ispisivao prototipove, sve dok nisam bio zadovoljan. Danas je taj volan spreman za tržište, a bit će to proizvod u ponudi tvrtke Prototype 3D, koju otvaram zajedno s timom. Tim se sastoji od nas četvorice: dvojice FSB-ovaca, jednog TVZ-ovca te kolege s VHZK-a. Jako smo dobra i uhodana ekipa iz srednje škole. Dio smo ZICER-ova (Zagrebački inovacijski centar) inkubacijskog programa i mislim da imamo jako dobru dinamiku zbog koje možemo napraviti odlične stvari!

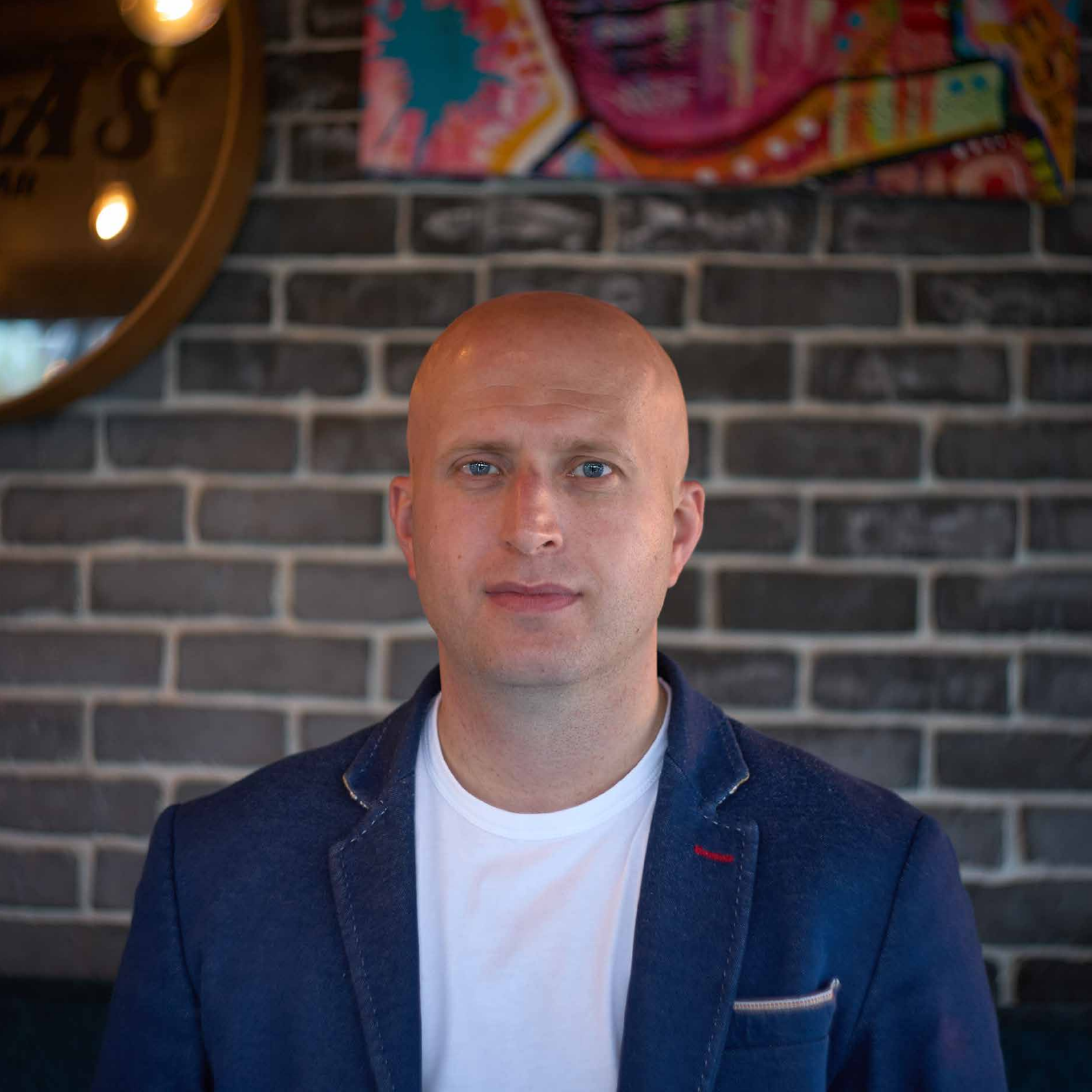
Tvrtka će imati u ponudi tri proizvoda: već spomenuti volan za simulatore vožnje, printer za medicinske primjene, za koji ćemo imati suradnju s Medicinskim fakultetom Sveučilišta u Zagrebu, te robotska kolica na kojima radimo. Robotska kolica bila su završni rad Branimira Budije, kolege kojega sam upoznao kad smo se obojica zaposlila u tvrtki Probotika, a čiji je intervju izašao prije nekoliko godina. On je započeo s razvojem, a zajedno smo nastavili te ih pripremamo za korištenje u stvarnim situacijama. Kolica služe kao pomoć osoblju u domovima za umirovljenike i rehabilitacijskim centrima, gdje njegovatelji pacijente trebaju premjestiti iz kolica u krevet i obratno. Pritiskom na gumb, ova se kolica podignu do razine kreveta kako njegovatelji ne bi morali taj dio fizičkog napora odrađivati sami. Osim ponude proizvoda, volio bih ići i u smjeru savjetovanja te bih volio da Prototype 3D bude prepoznat na europskoj razini. Smatram da imamo mnogo znanja i vještina koje možemo ponuditi te se veselim budućnosti koja nas čeka.

Niko Vrgoč, student

Ever since elementary school, I have been drawn to engineering. As a child, I would take apart toy cars, and in high school, a couple of friends and I were constantly looking for projects to work on. Our professors would give us tasks, and the school would help pay for the parts we needed. One year, we built a CNC machine, which we took to the World Skills Croatia competition and won first place. That machine is still used for practice in high schools today! In addition, we built a robotic arm and a photoboat – a boat equipped with an underwater camera for recording.

A friend encouraged me to play racing simulator games with him. I resisted for a long time because I couldn't find a steering wheel that met my requirements. Then my friend suggested I make my own. So, I spent countless hours in a CAD programme designing the ideal steering wheel, and I printed prototypes using my 3D printer until I was satisfied. Today, that steering wheel is market-ready, and it will be a product offered by Prototype 3D, the company I am starting with my team. Our team consists of four members: two students from FSB (Faculty of Mechanical Engineering and Naval Architecture), a student from the Zagreb University of Applied Sciences, and a colleague from the University of Applied Sciences Hrvatsko zagorje, Krapina. We have been a strong and well-established team since high school. We are part of the ZICER (Zagreb Innovation Centre) incubation program, and I believe we have a great dynamic that will enable us to achieve great things!

Our company will offer three products: the aforementioned steering wheel for driving simulators, a printer for medical applications (in collaboration with the Faculty of Medicine), and a robotic wheelchair we are developing. The robotic wheelchair was the master's project of Branimir Budija, a colleague I met when we were both employed at Probotika. His interview was published a few years ago. Branimir started the development, and together we continued to prepare the wheelchair for real-life application. It is designed to assist caregivers in nursing homes and rehabilitation centres, helping them move patients from the wheelchair to the bed and vice versa. With the push of a button, the wheelchair raises to bed level, so caregivers don't have to do that part of the physical labour themselves. In addition to offering products, I would also like to expand into consulting, and I would like Prototype 3D to be recognized at European level. I believe we have a lot of knowledge and skills to offer, and I look forward to the future that awaits us.



Ivan Rumenović, alumnus

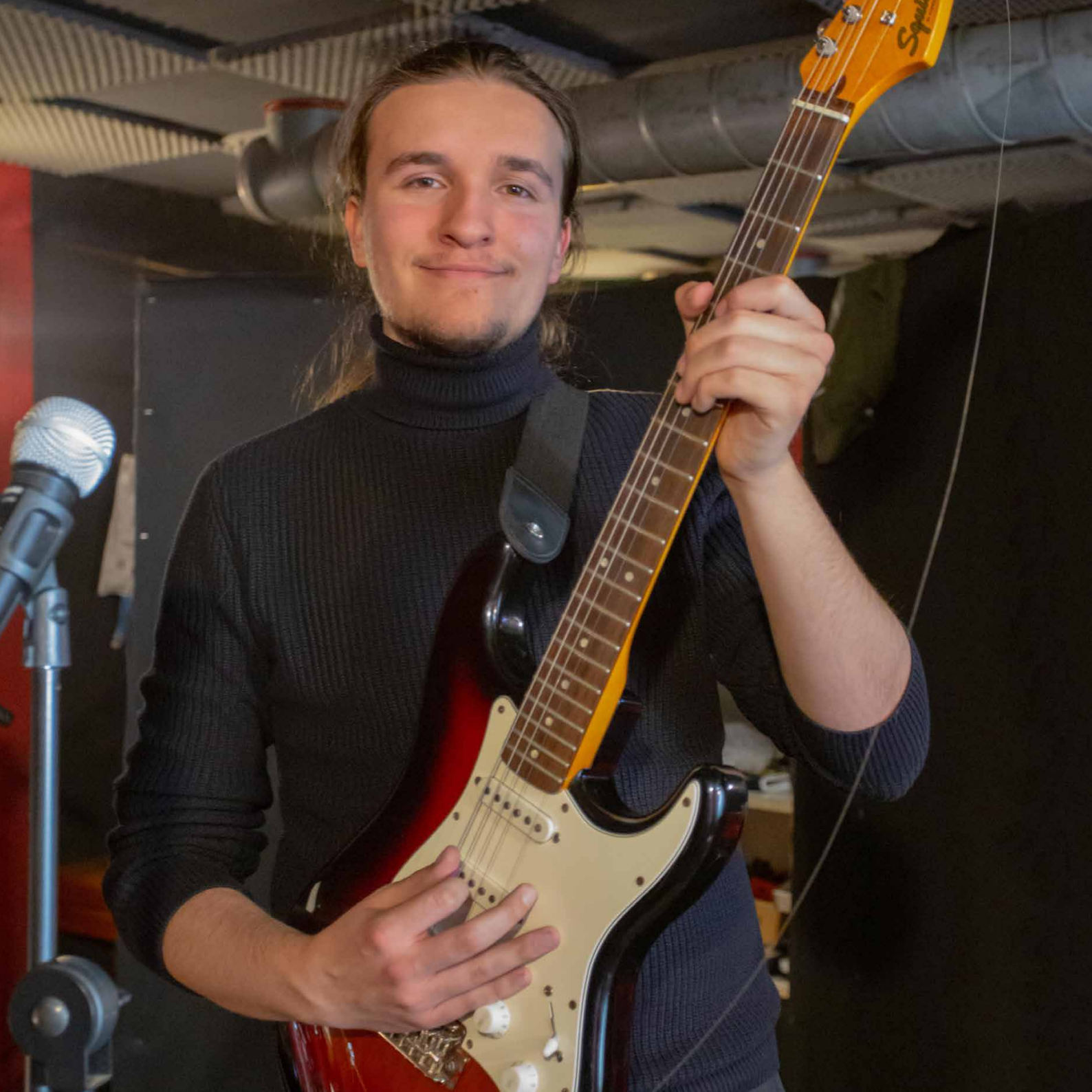
Projekt suradnje BMW grupe i FSB-a, koji vodim, sklopljen je početkom ove godine i mogu reći kako je dio mog sna i moj najdraži dosadašnji projekt. Želja mi je bila spojiti institucije koje su obilježile moje obrazovanje i karijerni put. U okupljenom projektnom timu trenutačno radi desetak ljudi, s intencijom povećanja tima. Radi se o izradi predikcijskih modela u proizvodnji baterijskih ćelija. Naglasak je svakako na primjeni umjetne inteligencije u proizvodnji. Ideja je nastala kao produkt rada u odjelu proizvodnje baterijskih ćelija, gdje trenutno radim kao voditelj projekta. U odjelu razvijamo nove tehnologije i prototipove. Dodatno sam htio pružiti šansu mladim naraštajima FSB-a, jer je takva šansa bila pružena i meni nakon školovanja na FSB-u. Naime, praksu koja je bila obvezni kolegij na diplomskom studiju FSB-a odlučio sam odraditi u Njemačkoj na nagovor mog dragog prijatelja koji mi je, usudio bih se reći u svojstvu starijeg brata, ukazao na prilike kojih dotad nisam bio svjestan. Studiranje u Njemačkoj znatno je drukčije od studiranja u Hrvatskoj: nema kolokvija, samo jedan teški ispit po predmetu na kraju semestra. Odluka nije bila laka, s obzirom na to da tada nisam govorio njemački, ali sam iz ove perspektive siguran kako je bila ispravna. Tema mog diplomskog rada bila je primjene umjetne inteligencije kod optimiziranja hlađenja baterijskog sklopa, tako da mogu reći da sam u ovom projektu spojio istraživački rad na fakultetu i radno iskustvo.

Moj karijerni put u BMW grupaciji započeo je na radnom mjestu razvojnog inženjera u pododjelu termičkog osiguranja vozila, gdje sam radio na ispitivanjima pregrijavanja i mjerama za njegovo sprječavanje. Moje radno iskustvo doista je bogato, ali bih htio istaknuti kako sam na FSB-u stekao način razmišljanja koji mi je uvelike pomogao u rješavanju problema. Osim toga, Fakultet nudi i razne dodatne aktivnosti. Tijekom studiranja odlučio sam se priključiti projektu *Formula Student*. Na projektu sam proveo tri godine i bio zadužen za konstrukcijske zadatke, marketing i financije. Tada nas je u Racing Timu bilo svega 25. S formulom smo otišli na natjecanje u Englesku te dobili Rektorovu nagradu. Natjecanje mi je ostalo urezano u sjećanje jer sam se tada smrznuo kao nikada. Ponio sam samo odjeću kratkih rukava, a spavalo se u šatorima na 7 stupnjeva. Za ostvarenje snova treba imati hrabrosti, a meni je drago da sam je imao.

Ivan Rumenović, alumnus

The BMW Group and FSB cooperation project, which I lead, was launched at the beginning of this year. I can say that it is part of my dream and my favorite project so far. Combining the institutions that shaped my education and career path was what I wanted. The formed project team now consists of ten members, and more are probably going to join. The team has been working on developing prediction models for the production of battery cells. The emphasis is certainly on the application of artificial intelligence in production. The idea was created as a result of work in the battery cell production department, where I currently work as a Project Leader. In the department, we develop new technologies and prototypes. Working there I wanted to give FSB's young generations a chance, because I was given one after studying at the FSB. Namely, I decided to do the internship, which was a compulsory course in the FSB's graduate studies, in Germany at the persuasion of my dear friend, who, I dare say in the role of an older brother, introduced me to opportunities I had not previously known about. Studying in Germany is significantly different from studying in Croatia – there are no midterm exams, only one difficult exam per subject at the end of the semester. Since I did not speak German at the time, it was difficult for me to make a decision, but considering it now, I am certain it was the right one. The topic of my graduation thesis was the application of artificial intelligence in optimizing the cooling of the battery pack, so I can say that in this project I combined research work at the university and work experience.

I started my career path in the BMW Group as a development engineer in the vehicle thermal management division, where I worked on overheating tests and measures to prevent it. I have considerable professional experience, but I would like to highlight that I developed a way of thinking at FSB that helped me a lot in solving problems. In addition, the faculty offers various additional activities. During my studies, I decided to join the Formula Student project. I spent three years on the project and was in charge of construction tasks, marketing and finance. At that time, there were only 25 of us in the Racing Team. We travelled to England to compete with Formula and won the Chancellor's Award. The competition remained etched in my memory because I froze like never before. I only packed short-sleeved clothes, and we slept in tents at seven degrees. You need to have the courage to make your dreams come true, and I'm glad I had it.



Lovro Urlić, student

Glazba mi je uvijek bila u krvi – prirodno, s obzirom na to da su mi oba roditelja išla u srednju glazbenu. Još kao klincu su mi puštali stare kasete opere gdje bih mahao kuhačom kao da dirigiram simfonijskim orkestrom. Kasnije, sa šest godina, otkrio sam kod tate knjigu *Živi brzo, umri mlad* o legendama poput Jima Morrisona i Jimija Hendrixa. Ta mi je knjiga otvorila vrata u svijet rocka. Godine 2020. krenuli smo s ekipom jamati. Od instrumenata sam isprobao svašta: bas, gitaru, ali pjevanje nisam mogao zamisliti. Prvi bend se raspao nakon četiri godine, nakon čega sam se s dvojicom prijatelja iz srednje prijavio na Superval, festival školskih bendova, pod imenom Smrdljivi Martini. Isprva smo to shvatili kao zafrkanciju te je plan bio razići se odmah nakon Supervala. No, stvari su krenule u drugom smjeru. Prvi ozbiljan trenutak bio je nastup u Vintageu; nisam mogao vjerovati koliko je ljudi došlo. A kad smo svirali u Saxu, u publici se stvorio pravi *mosh pit* i pritom su razbili četiri stola. To je scena koju nikad neću zaboraviti.

Imamo oko petnaestak autorskih pjesama. Na početku smo bili čisti punk-rock, a sada smo više u pravcu prog-rocka – dodali smo četvrtu gitaru, htjeli smo probati nešto novo. Nastupali smo diljem regije – od Sarajeva i Beograda do Šibenika i Rijeke. Na *Showcase* festivalu u Šibeniku gledao nas je Mrle iz Leta 3 i čak nas pohvalio. Prošla godina bila je posebno kaotična. Već par puta imao sam nastup u četvrtak navečer, a ujutro bi me čekalo pisanje kolokvija. Mislim da sam na tonskim probama bio jedini s knjigama. Ovo ljeto svirali smo na festivalu Mudri brk, gdje su nastupali neki od meni dragih izvođača: Idem, Mort i Kiklop. U Velikom su pogonu na *stageu* s nama bili Denis Katanec i Koi Koi – tek na pozornici osjetiš koliki je to zapravo prostor. Sljedeće sviramo kao predgrupa Mili Kekinu, a odmah nakon me čeka smjena na FER-ovoj brucošijadi. Jednom su nas na festivalu pitali u kakvim uvjetima sviramo. Šibenčani su spomenuli da im grad kupuje opremu, a neki bendovi sviraju u dvorcima. Mi smo počeli u garaži bez uzemljenja, gdje bi te struja opekla čim dodirneš nešto metalno, a grijanja i klime nije bilo ni u tragovima. Sad imamo cijeli studio u bivšem atomskom skloništu – za mene je to napredak.

Lovro Urlić, student

Music simply runs through my veins – naturally, when both of my parents went to music high school. When I was a little kid, they played me old opera cassette tapes and I would wave a wooden spoon as if I were conducting a symphony orchestra. Later, at the age of six, I discovered my dad's book Live Fast, Die Young about legends such as Jim Morrison and Jimi Hendrix. That book opened the door to the world of rock for me. In 2020, we started jamming together. I tried all kinds of instruments: bass guitar, regular guitar, but I couldn't imagine myself singing. My first band broke up after four years of playing together. Then I signed up with two friends from high school for Superval, a school band festival, under the name Smrdljivi Martini (Mottled Shieldbugs). At first, we took it as a joke and the plan was to break up right after the festival. But things went in a different direction. The first serious moment was our performance in Vintage; I couldn't believe how many people came to listen to us. And when we played at Sax, a real mosh pit was created in front of the stage and the audience broke four tables. It's a scene I'll never forget.

We have about fifteen original songs. At the beginning, we were a pure punk-rock band, and now we are more a prog-rock band – we have a fourth guitar as we wanted to try something new. We've performed all over the region – from Sarajevo and Belgrade to Šibenik and Rijeka. At the Showcase festival in Šibenik, Mrle from Let 3 watched us and even praised us. Last year was particularly chaotic. A couple of times I had a performance on Thursday night and a test at the Faculty the following morning. I think I was the only one with textbooks during the soundchecks. This summer we played at the Mudri brk festival where some of my favorite artists performed: Idem, Mort, and Kiklop. Denis Katanec and Koi Koi were on stage with us in Veliki pogon (*a concert hall*) – you feel how big the space really is only when you're on stage. Next, we'll play as the opening act for Mile Kekin, and right after that I'll play at FER's freshman party. At a festival we were asked once where we practice. The musicians from Šibenik mentioned that the city has bought equipment for them, and some bands play in castles. We started in a garage without grounding, where the electricity would burn you as soon as you touched something metallic, and there was no heating or air conditioning whatsoever. Now we have a whole studio in a former fallout shelter – for me, that's progress.

IZDAVAČ:
Fakultet strojarstva i brodogradnje
Sveučilište u Zagrebu, HRVATSKA

UREDNICI:
Gloria-Dahlia Legac
Ines Dedeić
Ana Lipovac
Lucija Lovrić
Magdalena Lugarić
Petra Rogošić
Dominik Slipac
Barbara Vuger
Jan Weltinger
Tea Žakula
Tihana Damić

DIZAJN I PRIJELOM:
Mario Lesar

LEKTURA:
Brankica Bošnjak Terzić (engleski jezik)
Vesna Cigan (engleski jezik)
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