

Vojislav Dukic

Dr sc. ETH,
Computer Science

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I am focused on building unconventional systems that challenge and contradict currently established assumptions.

Work experience

- 2021-present **Senior member of technical staff, Oracle, Zurich, Switzerland.**
After my PhD, I knew I wanted to stay focused on core cloud technologies. Thus, I joined Oracle to help develop new data processing services within Oracle's public cloud infrastructure. Here I am also thrilled to learn about all the technical and non-technical processes necessary for creating a successful cloud service that is reliable, scalable, and offers higher performance than the existing solutions on the market. <https://www.oracle.com/mysql/heatwave/>
- 2019-2021 **Founder, Multeex, Zurich, Switzerland.**
Remote work is here to stay, and I wanted to change the way we communicate while working remotely. The complexity of today's communication tools leads to fewer important messages being exchanged among coworkers. This results in incomplete information propagation within the company, a large communication overhead, and the feeling of team disintegration. Together with my team, I used my knowledge about distributed and networked systems, as well as experience in working remotely and managing a remote team, to develop Multeex, a platform that makes communication immediate, low-effort, information-rich. <https://multeex.com/>
- 2016-2021 **PhD candidate, ETH, Zurich, Switzerland.**
A life-changing experience. Besides learning a lot about all layers of the software stack in a distributed setting, I was blessed with being surrounded by an excellent advisor, professors, and top students from all around the world who constantly challenged and motivated me to develop my abilities to their full potential. <https://systems.ethz.ch/>
- 2019 **Research intern, Microsoft Research, Cambridge, UK.**
I joined MSR to expand my knowledge about physical cloud infrastructure and work on improving the current Data Center Interconnect (DCI). By being systematic in exploring the design space, analyzing various potential solutions analytically, and combining novel insights throughout the entire network stack, my effort resulted in an optical-circuit-switched network architecture that reduces the overall DCI cost by 7× compared to today's solutions. <https://www.microsoft.com/en-us/research/lab/microsoft-research-cambridge/>

- 2016 **System designer**, *Ava soft*, Novi Sad, Serbia.
I love startups and building systems from scratch. I joined Ava, an early-stage startup, where I led the design and development of a real-time safety platform. Unfortunately, I decided to leave, because I got a PhD position at a top university, and nobody misses such opportunities.
<https://ava.info/>
- 2015 **Data science intern**, *EPFL*, Lausanne, Switzerland.
I was never afraid of switching my field of work. Moreover, I actually love making a change in focus to avoid stagnation. In 2015, I got an opportunity to work for a material science department, at EPFL. There I was focused on leveraging machine learning for the discovery and construction of new 2D materials. My key contribution here was designing an algorithm that can analytically extract a 2D layer only by looking at a unit cell of a crystal.
<http://theosrv1.epfl.ch/>
- 2014-2016 **Research and teaching assistant**, *FTN*, Novi Sad, Serbia.
In parallel to my efforts in the industry, I was working at my home university where I was doing research and teaching in the domain of databases, information systems, and domain-specific languages.
<http://www.ftn.uns.ac.rs/>
- 2014 - 2016 **Co-founder**, *Challenger0*, Novi Sad, Serbia.
Before joining Ava, I had my first successful failure. With a friend of mine I failed to attract a substantial number of users to our mobile-first video sharing platform, but I learned a lot about product development and entrepreneurship.
unsuccessful startup
- 2015 **ERP designer**, *DOOB Innovation Studio*, Novi Sad, Serbia.
In parallel to my studies, I was always looking for hands-on experience in the industry to expand my horizons. This is how I ended up as a part-time engineer at DOOB where I was engaged in designing and implementing an ERP solution.
<http://www.doobinnovation.com/>
- 2014 **Intern**, *Huawei*, Beijing-Shenzhen, China.
The end of my bachelor days was prime time to slowly move to the international scene, which is not that simple from my home country. Hard work at university brought me an opportunity to intern at Huawei China and learn more about their software backend solutions for mobile carriers.
<http://www.huawei.com/>
- 2014 **Data science intern**, *Levi9*, Novi Sad, Serbia.
Towards the end of my bachelor studies, I started moving from low-level system software to the application layer where I was interested in databases and data processing. Thus, as an intern, I worked on designing a data collection and processing system which identifies influencers on social media.
<https://www.levi9.com/>
- 2014 **ERP designer**, *Rajak*, Novi Sad, Serbia.
At Rajak, I designed and implemented a web-based information system. Although the company is relatively small, I am particularly proud of this experience, because this was the first time I successfully develop a software product from scratch to a full solution. This process included selling my software idea, talking to non-technical staff and understanding their requirements, and ultimately developing a piece of software that supports multiple business processes. This system is still in active use.
<http://www.rajak.rs/>

2012 **Compiler developer**, *RT-RK Institute for Computer Based Systems*, Novi Sad, Serbia.

My first serious professional engagement. This is where I boosted my technical skills and knowledge on various topics all by implementing architecture-dependent optimizations in a C compiler for the Coyote DSP architecture.

<http://www.rt-rk.com/>

Education

2016–2021 **PhD**, *ETH*, Zurich, Switzerland.

Distributed systems and networking; Advisor: Prof. Ankit Singla

At ETH, I have learned and perfected my most valuable skill - critical thinking. With it, I design and build systems with strong theoretical foundations that focus on improving cloud infrastructure in three dimensions: *usability, performance, and cost*. My work involves low-level and kernel programming, using and deploying programmable hardware like FPGA and P4 switches, machine learning training and deployment, creating system and workload simulators, designing novel algorithms and heuristics, and evaluating and analytically proving key system properties.

2010–2015 **Bachelor & Master**, *FTN*, Novi Sad, Serbia, *avg. grade 10.00 out of 10*.

Electrical and computer engineering, Applied computer science

I started my journey in computer science by being interested in low-level software and embedded systems, and that was my focus during my bachelor studies. During my master studies, I was focused on databases, information systems, and supporting business processes in the digital world. My dedication was reflected in the average grade 10.0, which means I achieved a score higher than 95% on every single exam and was the only one in my class to do so.

Selected publications

SoCC '20 **Photons: Lambdas on a diet**

Vojislav Dukic, Rodrigo Bruno, Ankit Singla, Gustavo Alonso

SIGCOMM '20 **Beyond the Mega-Data Center: Networking Multi-Data Center Regions**

Vojislav Dukic, Ginni Khanna, Christos Gkantsidis, Thomas Karagiannis, Francesca Parmigiani, Ankit Singla, Mark Filer, Jeffrey L. Cox, Anna Ptasznik, Nick Harland, Winston Saunders, Christian Belady

NSDI '19 **Is advance knowledge of flow sizes a plausible assumption?**

Vojislav Dukic, Sangeetha Abdu Jyothi, Bojan Karlas, Muhsen Owaida, Ce Zhang, Ankit Singla

* [Click here for a full publication list](#)

Teaching

Although I am an industry- and practice-oriented person, I enjoy working with students. I also taught the following courses:

ETH Zurich master: Advanced computer networks, Future Internet

bachelor: Linear algebra, Computer networks

FTN master: Software-aided business process modeling

Novi Sad bachelor: Object-oriented programming, Compilers, Programming languages and data structures, Computer architecture, Introduction to databases, Advanced databases

Languages

- Englisch Fluency in reading and writing
German Verbal and written communication - I passed "*Göthe Institut*" B2 Prüfung
Swiss German Verbal understanding - I am married to a Swiss German native speaker
Serbian Native speaker

Awards and scholarships

- 2016 **Student of the year**, *FTN*, Novi Sad, Serbia.
The average grade of 10.0 combined with other activities brought me the best student award among 2000 students at my school.
<http://www.ftn.uns.ac.rs/>
- 2014 2015 **Dositeja**, *Ministry of youth and sports*, Belgrade, Serbia.
Dositeja is a award provided to top 500 students the entire country for their achievements at the end of their bachelor (2014) and master (2015) studies.
<http://www.mos.gov.rs/dositeja/>
- 2011 2012 **University and Faculty Excellence Award**, *UNS*, Novi Sad, Serbia.
2013 2014 During my bachelor studies, I kept receiving excellence awards provided by both my school and the university and awarded to students who achieved exceptional results in a given year.
<http://www.uns.ac.rs/>
- 2013 2014 **University and Hemofarm Foundation Scholarship**, Serbia.
Throughout my entire education, I struggled financially. However, scholarships for exceptional students provided by my home university as well as the Hemofarm Foundation helped me in maintaining my complete focus on studying.
<http://www.fondacijahemofarm.org.rs/> <http://www.uns.ac.rs/>
- 2006-2015 **Privrednik Scholarship**, *Privrednik*, Novi Sad, Serbia.
I want to express my sincere gratitude to the Privrednik Foundation. The foundation recognized my abilities and potential very early and supported my education in various ways continuously from the early days in my high school all to way to the end of master studies.
<http://www.fondprivrednik.org.rs/>