Dr. Ir. Saša Cvetković
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I am a seasoned professional with entrepreneurial spirit and 21 years of work experience in the Netherlands in complex multi-disciplinary research and development environments of Phillips, Bosch and ASML, having had various roles: developer/researcher, architect, competence leader, team leader, project leader and group leader. I also have extensive experience with regular customer interaction and joint development programs between Industry and Academia. Lecturer at several in-house company courses for the development of engineers. One year ago relocated to Serbia and started working in the field of biomedical engineering and becoming an Assistant Professor at the department of information technology of the faculty of technical sciences Cacak.

Technical skills and tools, personal skills

- Informatics, programming in various programming languages (e.g. Matlab, Simulink, C/C++, MathCad, Python), prototyping, performing experiments, analysis, simulations and (mathematical) modeling of physical systems, test design, database creation and manipulation (e.g. SQL).

- Data analysis & visualization, Math & Statistics, Algorithm Development, Embedded Systems, (Real-Time) Signal Processing, Computer Vision, Electrical engineering, Research.

- Creative, strong analytical thinker with a vision, while having a pragmatic and pro-active attitude. Empathic, positive and supportive team player able to get things done. Highly-motivated, committed and self-operating, innovation and goal driven, motivator/multiplier, open minded, flexible.

- People management with servant leadership style, coaching and developing people, teaching, giving trainings. Project management including good stakeholder management, strong communication and presentation skills, experience with continuous improvement process and change management.

Technical education

- **PhD, Eindhoven University of Technology   Eindhoven, The Netherlands**
In parallel to work (2004-2011), I obtained a PhD degree at Fac. of Electrical Engineering, Signal Processing Systems department, Video Coding and Architectures group, under supervision of Prof. Dr. Ir. Peter H.N. de With (IEEE Fellow).   Check: https://www.tue.nl/en/our-university/departments/electrical-engineering/ and https://vca.ele.tue.nl/home
PhD topic: *Optimization of Video Capturing and Tone Mapping in Video Camera Systems*.
In mu academic experience, I have also written and read many scientific papers, performed proof reading for my colleagues, presented and defended various inventions and papers on a number of international conferences.
Award: Won Chester W. Sell award for the second best paper in IEEE Transactions on Consumer Electronics for year 2008.

- **Univ. of Belgrade, Faculty of Electrical Engineering   Belgrade, Serbia**
During my studies (October 1995-June 2000, 10 semesters), I had 41 subjects with outstanding GPA 9.07 out of 10. We had a lot of mathematics, physics, electronics, programming and signal processing. Check: https://www.etf.bg.ac.rs/en
Selected projects:
- *Global search techniques applied on the problems in Telecommunications (GA, SA and TS)*
- *Digital image processing for image enhancement and compression*
Master Thesis: *Multi-Carrier CDMA in Wireless Channels.*

Assistant Professor, Faculty of Technical Sciences Cacak (Feb 2024 - present)
Cacak, Serbia
Professor and senior researcher in the area of information technology, signal processing, data science and analysis.

Research and Development institute Lola (Mar 2023 - Feb 2024)
Belgrade, Serbia

Senior Researcher in the area of Biomedical engineering: data analysis, algorithms and signal processing of biological signals and data. Focus on advancing technology and medicine to develop new devices and equipment for improving human health.

ASML: Cluster Team Leader, Architect, Data Analyst (April 2014-March 2023)
Eindhoven, the Netherlands

ASML (www.asml.com) is the world's leading manufacturer of chip-making equipment: the lithography machines that are an essential component in chip manufacturing with nm accuracy. Our customers are companies such as Intel, who use our machines in 'fabs' – microchip manufacturing plants – to create microchips that are eventually used in many electronic devices, including smartphones, laptops etc.

In various technical roles, I have contributed to specification, design, verification and integration of several ASML's products and solutions to achieve desired performance of lithographic printing accuracy. In the role of a cluster team leader, I am leading an engineering team in the Netherlands and USA (physicists, mathematicians, electrical and SW engineers). Our team is verifying a real-life performance of ASML HW&SW deliveries by means of (big) data analysis consultation services. Our goal is to reach and improve performance of Intel's process towards agreed specs and functionalities via close collaboration with Intel's Technology Development center in Hillsboro: the group of Dr. Mark C. Phillips, Intel Fellow, Director of Lithography Hardware and Solutions. In addition, I am also responsible for teaching several technical courses, review of work and mentoring people from our department.

> *March 2020-present   Cluster Team Leader Intel NTPs & sub-Competence Team lead, Overlay Control*
> *July 2018-March 2020   Senior Design Engineer/ Architect/PL, On Product Performance*
> *August 2017-July 2018   Senior Architect In-Device Metrology on YS1375 tool, APPS*
> *April 2014 - August 2017 Machine Overlay specialist and Competence Leader Machine Overlay*

Achieved results: building highly motivated people and teams that excel, year after year of successfully building world-class products and helping stakeholders and customers to reach their roadmap goals.

Bosch Security Systems NL: Group leader of algorithm development, Team leader and (Senior) algorithm developer (August 2001 – April 2014)
Eindhoven, the Netherlands, https://www.boschsecurity.com/xc/en/solutions/video-systems/

Bosch Security Systems is one of world's most advanced producers of video camera systems and analysis software for video surveillance. I was working on algorithm development for high-end video cameras which should provide excellent images/video in all imaging conditions/applications and analyze video content. I worked in multi-discipline environment on all important development aspects: problem analysis, simulations, algorithm development, testing, integration, productization, new product development and innovations, etc. Several patents were granted to me for various algorithms. The algorithms that I have designed and developed have all been implemented in SW or ICs/FPGA's and used in various cameras. In 2011 I became Team leader of global Bosch center of competence for camera algorithms and a group leader of algorithm development team. As such, I was responsible for maintaining competences and constant flow of new ideas for our products: follow technology trends, visit conferences, performing patent reviews, establish cooperation with universities, research institutes and companies (business development), technically leading various projects (incl. European subsidy projects, innovation projects, projects with internal/external customers, technical vendor contacts, etc.). In addition, I was also giving technical courses and mentoring team members.

> *2011-2014 Cluster leader (group + team leader) of algorithm development*
> *2001-2011 (Senior) development/research engineer*

Image and video signal processing
- Real-time (embedded) local and global image enhancement and processing of video, HDR imaging
- Design of image processing functions/architectures for optimal color rendering, contrast and high SNR.

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- Metrology and control loops for optimal exposure control for cameras (control of lens, exposure time, gains, etc.), demosaicking (interpolation) of imaging sensors, color artifact reduction, bad pixel correction, image stabilization, auto-focus, automatic white balance, noise reduction and deblurring, correcting geometrical lens distortions (e.g. fish-eye).

Video content analysis, Computational imaging

- Algorithm for establishing/fitting robust model of lens lateral chromatic aberrations based on image measurements (pattern matching), and aberrations correction.
- Motion detection and object tracking and tagging: background modeling, foreground detection, light-change (shadow) detection and video content analysis.
- Using video content analysis (event/object detection) for lowering bit-rate, removing motion artifacts and improved object detection.
- Depth from defocus: determining distance of scene objects from the camera, to create all in focus (pin-hole) image, and for video content analysis purposes

Achieved results:
- Built a good team that delivers on time, with continuous innovation and improvement focus.
- Managed to shorten development time of algorithms and tuning for new camera types for more than 60%, and a whole cameras development process (incl. making SW and testing) for more than 50%.
- Award-winning DinionXF, Dinion2XF and Dinion HD 1080p range of cameras for its outstanding innovative imaging performance, in which I did major work on image and video processing as part of the team. These awards are given by specialized test houses and magazines for security imaging.
The DinionXF Day/ Night Camera won the "NSCA Innovations in Technology" Award 2005. The Dinion 2X (HDR) video camera won the CPSE Golden Excellence Award in 2009, and the Product of the Year 2010 PSI Premier Award. Dinion HD 1080p Day/Night surveillance camera won Red Dot design award in 2012.