

JELENA TRISOVIC

*Final-year PhD candidate with expertise in **perception-based control**, combining **control theory** and **computer vision** to build **safe and reliable autonomous systems**. Additionally, my work focuses on translating insights from control into **learning-based methods**, advancing their understanding and interpretability. I am seeking an internship opportunity to apply and further improve my skills in **machine learning** and safe autonomous system development.*



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🎓 Jelena Trisovic

EXPERTISE

- Intelligent systems
- State-space sequence models
- Model predictive control
- Simultaneous Localization and Mapping (SLAM)
- Estimation

EXPERIENCE

Doctoral fellow

ETH AI Center, Advised by Prof. Dr. M. N. Zeilinger and Prof. Dr. M. Pollefeys

Zurich, Switzerland

September 2021 - present

- Applied control-theoretic tools to analyze deep sequence models (state space models, transformers).
▷ **Tech:** PyTorch, JAX
- Designed and experimentally validated uncertainty-aware, safe perception-based control for autonomous racing.
▷ **Tech:** Python, C++, ROS, Blender
- Developed a SLAM method with explicit uncertainty guarantees for robust perception in safety-critical settings.
▷ **Tech:** Python, Casadi

Instructor

Girls Code Too

Zurich, Switzerland

September 2021 - May 2022

- Instructed Python coding classes, with a special focus on preparation for the Swiss Informatics Olympiad.

Research in Industrial Projects for Students

Institute for Pure and Applied Mathematics, University of California Los Angeles

Los Angeles, USA

Summer 2017

- Researched automatic conflict detection in police body-worn camera audio, developing a novel method combining adaptive noise removal, machine learning-based speech segmentation, and conflict measures from phrase repetition and intensity, resulting in an IEEE ICASSP 2018 [publication](#).

EDUCATION

M.S. in Electrical Engineering and Information Technology

Swiss Federal Institute of Technology (ETH), GPA: 5.80/6.00 (with distinction)

Zurich, Switzerland

2018 - 2021

Thesis: ▷ Global Localization in Semantic Building Models

Semester Projects: ▷ Image Quality Mapping with Explicit Modeling of Linear and Gamma Corrections

▷ Multiple Image Blind Deblurring, [published](#) at IEEE ICIP 2020

B.S. in Electrical Engineering and Computing

University of Belgrade, School of Electrical Engineering, GPA: 10.00/10.00

Belgrade, Serbia

2014 - 2018

SELECTED PUBLICATIONS (FULL LIST CAN BE FOUND HERE)

- [1] **J. Trisovic**, A. Didier, S. Muntwiler, and M. N. Zeilinger, “Moving horizon estimation for simultaneous localization and mapping with robust estimation error bounds”, *2025 IEEE European Control Conference*,
- [2] R. Rickenbach*, **J. Trisovic***, A. Didier, J. Sieber, and M. N. Zeilinger, “Task-level insights from eigenvalues across sequence models”, *submitted to ICLR 2026*,
- [3] **J. Trisovic**, A. Carron, and M. N. Zeilinger, “Uncertainty-aware perception-based control for autonomous racing”, *submitted to IEEE Transactions on Control Systems Technology*, 2025.

ONGOING PROJECTS

- Analysis of large language models using insights from control theory
- Perception-aware control for autonomous racing
- Safe object manipulation using large language models and model predictive control

SKILLS

- **Programming languages and frameworks:**
 - ▷ *Python, PyTorch* ● ● ●
 - ▷ *C++, MATLAB, LabVIEW* ● ● ○
 - ▷ *JAX, TensorFlow, ROS* ● ○ ○
- **Other tools and software:**
 - ▷ *Linux, Latex, GIT, TIA Portal, SQL, RobotStudio*

LANGUAGES

- **English:** fluent, C2
 - Cambridge Proficiency Exam
- **German:** intermediate, B2
 - Goethe-Zertifikat
- **Russian:** intermediate, B1
- **Serbian:** mother tongue

AWARDS

- Award for the best unconference proposal at the Eastern European Machine Learning Summer School 2020
- Excellence Scholarship and Opportunity Programme Scholar 2018 - awarded to the best ETH master's applicants
- Student valedictorian at the School of Electrical Engineering, University of Belgrade - awarded to the best student of the entire cohort
- IEEE Signal Processing Society Travel Grant to attend the 2018 IEEE ICASSP
- Outstanding Poster Award at Joint Mathematics Meeting 2018
- Multiple medals at international mathematics competitions

MISCELLANEOUS

Teaching Experience

- Head teaching assistant at the Swiss Federal Institute of Technology (ETH) since autumn semester 2022
- Teaching assistant at Ashesi University in Ghana, spring semester 2022 and 2023
- Undergraduate teaching assistant at the School of Electrical Engineering, University of Belgrade 2015-2018

Machine Learning Summer Schools

- Lisbon 2025, Eastern European 2020, Petnica 2018

Internship at MikroElektronika D.O.O

Summer 2016

- Built an air quality control app, gaining experience in embedded programming (PIC and ARM architectures)