

EDUCATION

University of California, San Diego*PhD student in Mechanical and Aerospace Engineering*

Sept. 2024 – present

- Advisor: Miroslav Krstic
- Focus: Model-free Optimization, Safe and Fixed-Time Stabilization, Nonholonomic Systems, Reinforcement Learning

University of California, San Diego*Visiting student conducting master thesis research in prescribed-time source seeking algorithms*

Nov. 2021 – May 2022

Technical University of Munich (TUM), Germany*Master of Science in Electrical Engineering and Information Technology*

Sept. 2019 – June 2022

- Focus: Automation & Robotics
- Relevant coursework: Linear/Nonlinear Control and Optimization, Computer Vision and Pattern Recognition, Machine Learning in Robotics, Embedded Control, Dynamic Programming and Reinforcement Learning, Model Predictive Control, System Identification, Model Order Reduction Methods and Port-Hamiltonian Systems.

University of Erlangen-Nuremberg (FAU), Germany*Bachelor of Science in Electrical Engineering, Electronics and Information Technology*

Oct. 2015 – Aug. 2019

EXPERIENCE

Chair of Information-oriented Control, TUM | Research Assistant

March 2023 – April 2024

Research in the field of safe learning-based control with Gaussian processes

Taught courses and supervised students in the field of nonlinear, networked control and robotics

fortiss Research Institute, Munich, Germany | Internship

Sept. 2021 – Nov. 2021

Developed a reinforcement learning framework for peer-to-peer microgrids energy trading in Python

Chair of Automatic Control, FAU | Undergraduate Research Assistant

Oct. 2019 – March 2020

Developed fault diagnosis algorithms based on the modulating functions approach

Siemens Mobility, Nuremberg, Germany | Internship

Nov. 2018 – July 2019

Developed software for internal KPI tracking for quality management

PUBLICATIONS

M. Krstić, K. H. Kim, and **V. Todorovski** (2025). Half-Global Deadbeat Parking for Dubins Vehicle. *arXiv preprint arXiv:2509.25571*.

V. Todorovski, K. H. Kim, and M. Krstić (2025). Modular design of strict control Lyapunov functions for global stabilization of the unicycle in polar coordinates. *arXiv preprint arXiv:2509.25575*.

K. H. Kim, **V. Todorovski**, and M. Krstić (2025). Inverse Optimal Feedback and Gain Margins for Unicycle Stabilization. *arXiv preprint arXiv:2509.25563*.

M. Krstić, **V. Todorovski**, K. H. Kim, and A. Astolfi (2025). Integrator Forwarding Design for Unicycles with Constant and Actuated Velocity in Polar Coordinates. *arXiv preprint arXiv:2509.25579*.

V. Todorovski and M. Krstic (2025). Newton Nonholonomic Source Seeking for Distance-Dependent Maps. in *IEEE Transactions on Automatic Control*, vol. 70, no. 1, pp. 510-517

T. Y. Huang, S. Zhang, X. Dai, A. Capone, **V. Todorovski**, S. Sosnowski, and S. Hirche (2024).

Learning-based prescribed-time safety for control of unknown systems with control barrier functions.

IEEE Control Systems Letters.

V. Todorovski and M. Krstic (2023). Practical prescribed-time seeking of a repulsive source by unicycle angular velocity tuning. *Automatica*, paper 111069, vol. 154.

V. Todorovski and M. Krstic (2022). Prescribed-time seeking of a repulsive source by angular velocity tuning. in *2022 American Control Conference (ACC)*, pp. 8-13.

F. Fischer, **V. Todorovski** and J. Deutscher (2021). Fault detection for lumped-parameter LTI systems using integral transformations and trajectory planning methods. In *2021 5th International Conference on Control and Fault-Tolerant Systems*, pp. 79-84.

TEACHING

Teaching Assistant Positions

Designed and organized the lectures/exercises/exam and held tutorial sessions for:

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| • Control and Automation Laboratory, TUM | Oct. 2023 – Feb. 2024 |
| • Networked Control Systems Lecture, TUM | May 2023 – Aug. 2023 |
| • Signal and Systems Lecture, FAU | May 2018 – Aug. 2018 |
| • Fundamentals of Electrical Engineering Laboratory, FAU | Oct. 2017 – Feb. 2018 |

MISCELLANEOUS

Review Activities: Automatica, International Journal of Robust and Nonlinear Control, System & Control Letters

Technical: C/C++, Java, Python, MatLab, L^AT_EX, Git/GitHub

Languages: Macedonian (native), English (fluent), German (fluent), Serbo-Croatian (bilingual)

Awards: Scholarship: TUM Konrad Zuse School of Excellence for Reliable AI (2023–2024), AP Scholar Award in Mathematics and Physics (2014), President's Education Awards Program (2014)