

EDUCATION

University of California San Diego

Sept. 2024 – present

PhD student in Mechanical and Aerospace Engineering

- Advisor: Prof. Miroslav Krstic
- Focus: Model-free Optimization, Extremum Seeking Control, Safe/Optimal/Adaptive/Fixed-Time Stabilization, Nonholonomic Systems, Reinforcement Learning
- Relevant coursework: Nonlinear Systems, Nonlinear Control, Hybrid Systems, Control of Distributed Parameter Systems (PDEs), Safety for Autonomous Systems, Mathematical Analysis for Applications

University of California San Diego

Nov. 2021 – May 2022

Visiting student conducting master thesis research in prescribed-time source seeking algorithms

- Advisor: Prof. Miroslav Krstic
- Grade: 1.0/1.0 (US Grade equivalent 4.0/4.0)

Technical University of Munich (TUM), Germany

Sept. 2019 – June 2022

Master of Science in Electrical Engineering and Information Technology

- 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.
- US GPA Equivalent: 4.0/4.0 (verified by World Education Services)

University of Erlangen-Nuremberg (FAU), Germany

Oct. 2015 – Aug. 2019

Bachelor of Science in Electrical Engineering, Electronics and Information Technology

- US GPA Equivalent: 3.92/4.0 (verified by World Education Services)

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

V. Todorovski, K. H. Kim, A. Astolfi, and M. Krstić (2025). Nonholonomic Robot Parking by Feedback—Part I: Modular Strict CLF Designs. *submitted to IEEE Transactions on Automatic Control, arXiv:2511.15119*.

K. H. Kim, **V. Todorovski**, and M. Krstić (2025). Nonholonomic Robot Parking by Feedback—Part II: Nonmodular, Inverse Optimal, Adaptive, Prescribed/Fixed-Time and Safe Designs. *submitted to IEEE Transactions on Automatic Control arXiv:2511.15219*.

M. Krstić, K. H. Kim, and **V. Todorovski** (2025). Dubins Vehicle Stabilization: Deadbeat Parking and Asymptotic ‘Spinaway’. *submitted to Automatica*.

M. Krstić, K. H. Kim, and **V. Todorovski** (2025). Half-Global Deadbeat Parking for Dubins Vehicle. *submitted to ACC 2026, 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. *submitted to ACC 2026, arXiv:2509.25575*.

K. H. Kim, **V. Todorovski**, and M. Krstić (2025). Inverse Optimal Feedback and Gain Margins for Unicycle Stabilization. *submitted to ACC 2026, 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. *submitted to ACC 2026 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*, 8, 1817-1822.
- 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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| • Nonlinear Systems, UCSD | Jan. 2026 – Mar. 2026 |
| • 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, Simulink

Languages: Macedonian (native), English (fluent/IELTS BAND 8.0), German (fluent/ TestDaF C1), Serbo-Croatian (bilingual)

Awards: Technical University of Munich, Konrad Zuse School of Excellence for Reliable AI (Scholarship, 2023–2024), Bavarian Californian Technology Center (BaCaTec) Research Stay Stipend (2023), AP Scholar Award in Mathematics and Physics (2014), President's Education Awards Program (2014)