Anastasios Vlachos

a.vlachos@rug.nl · Personal Website · Google Scholar

Education

University of Groningen — Groningen, Netherlands
PhD in Systems, Control and Optimization — Sep. 2025 - present
- **Supervisor**: Prof. dr. ir. Bart Besselink
- **Topic**: Contract-Based Verification for Modular Control System Design

ETH Zürich — Zürich, Switzerland
Master of Science in Information Technology and Electrical Engineering — Sep. 2022 - Apr. 2025
- **Specialization**: Systems and Control
- **GPA**: 5.4/6
- **Thesis**: "The Price of Constraints in Linear Tracking Model Predictive Control", Grade: 6/6

National Technical University of Athens (NTUA) — Athens, Greece
Diploma in Electrical and Computer Engineering (5-year degree; 300 ECTS) — Sep. 2015 - May 2021
- **Major**: *Electronics & Systems*
- **GPA**: 8.94/10.00 (top 8%)
- **Thesis**: "Mathematical Analysis of ΣΔ Modulators and Applications", Grade: 10/10

Research Experience

Automatic Control Laboratory (IfA), ETH Zürich — Zürich, Switzerland
Master Thesis — Sep. 2024 - Apr. 2025
- Worked on studying the influence of constraints on Linear Quadratic Tracking problems.
- Provided theoretical complexity bounds that captured the aforementioned influence.
- Conducted numerical simulations that verify these bounds.
- Supervised by Aren Karapetyan, Dr. Anastasios Tsiamis, Dr. Efe Balta and Prof. Dr. John Lygeros.

Automatic Control Laboratory (IfA), ETH Zürich — Zürich, Switzerland
Semester Project — Oct. 2023 - Mar. 2024
- Worked on bridging offline and online prediction methods in the problem of Pedestrian Tracking.
- Proposed a method to adapt online to the residual errors of offline-trained models.
- Provided Regret guarantees for our method and conducted simulations to showcase its efficacy.
- Supervised by Dr. Anastasios Tsiamis, Aren Karapetyan, Dr. Efe Balta and Prof. Dr. John Lygeros.

Circuits and Systems Group (Prof. P.P. Sotiriadis), NTUA — Athens, Greece
Diploma Thesis - Undergraduate Research Assistant — Mar. 2020 - Dec. 2021
- Completed my diploma thesis by examining ΣΔ modulators from a dynamical-systems viewpoint and presenting their usefulness in Frequency Synthesis and Stochastic Filtering applications.
- Resulted in publication at MOCAST 2021 (nominated for **Best Paper Award**) and an invited journal paper.

Publications

[1] **A. Vlachos**, A. Tsiamis, A. Karapetyan, E. C. Balta, and J. Lygeros, "Online residual learning from offline experts for pedestrian tracking," *arXiv preprint arXiv:2409.04069*, 2024.

[2] N. Temenos, **A. Vlachos**, and P. P. Sotiriadis, "Efficient stochastic computing fir filtering using sigma-delta modulated signals," *Technologies*, vol. 10, no. 1, p. 14, 2022.

[3] **A. Vlachos**, N. Temenos, and P. P. Sotiriadis, "Exploring the effectiveness of sigma-delta modulators in stochastic computing-based fir filtering," in *2021 10th International Conference on Modern Circuits and Systems Technologies (MOCAST)*, IEEE, 2021, pp. 1–4.

Teaching Experience

Linear Systems Theory (ETH Zürich) — Autumn 2023, 2024
Teaching Assistant
- Consult on the clarity, correctness and difficulty of the proposed homework and grade the homework submissions of students, on a biweekly basis.

Advanced Topics in Control - Distributed Systems and Control (ETH Zürich) — Spring 2024
Teaching Assistant
- Grade the homework submissions of students, on a monthly basis, and provide grades statistics.

Technical Skills

Programming Languages: Python, Matlab, C/C++

Software Frameworks: PyTorch, Scikit-Learn, NumPy,

Simulation Tools: ROS-Gazebo

Other Tools: Latex

Languages

English(fluent, C2), **German**(intermediate, B1), **Greek**(native)