ABDULLAH TOKMAK

DOCTORAL RESEARCHER AT AALTO UNIVERSITY

PERSONAL INFORMATION

Citizenship: German
Date and place of birth: 08.03.1998 in Düren, Germany
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PUBLICATIONS

Journal articles

[AT1] **A. Tokmak**, C. Fiedler, M. Zelinger, S. Trimpe, J. Köhler, "Automatic nonlinear MPC approximation with closed-loop guarantees," IEEE Transactions on Automatic Control, 2025.

Conference proceedings

[AT2] **A. Tokmak**, T. Schön, D. Baumann, "Towards safe control parameter tuning in distributed multi-agent systems," Conference on Decision and Control, 2025.

[AT3] **A. Tokmak**, T. Schön, D. Baumann, "Safe exploration in reproducing kernel Hilbert spaces," International Conference on Artificial Intelligence and Statistics, 2025.

[AT4] **A. Tokmak**, T. Schön, D. Baumann, "PACSBO: Probably approximately correct safe Bayesian optimization," Symposium on Systems Theory in Data and Optimization, 2024.

Preprints

[AT5] **A. Tokmak**, T. Schön, D. Baumann, "Safe Bayesian optimization (BO) across noise models: A practical and unified framework," under review for IEEE Control System Letters, 2025.

EXPERIENCE

Doctoral researcher at Aalto University 03/2023 - today
Department of Electrical Engineering and Automation, Cyber-Physical Systems Group *Espoo, Finland*

- Ph.D. project: Safe and resource-aware multi-agent learning with Gaussian processes
- Supervisors: Prof. Dr. Dominik Baumann (Aalto University) and Prof. Dr. Thomas Schön (Uppsala University)

Intern at MBDA Deutschland GmbH 10/2019 - 03/2020
Flight Control Algorithms *Schrobenhausen, Germany*

EDUCATION

ETH Zurich 04/2022 - 11/2022
Exchange student in Mechanical Engineering (project grade: 6.0/6.0) *Zurich, Switzerland*

RWTH Aachen University 10/2020 - 11/2022
Master of Science in General Mechanical Engineering (grade: 1.1/1.0, with distinction) *Aachen, Germany*

RWTH Aachen University 10/2016 - 09/2020
Bachelor of Science in Mechanical Engineering (grade: 1.8/1.0) *Aachen, Germany*

TEACHING

Digital and optimal control 09/2023 - today
Teaching assistant *Espoo, Finland*

- Responsible for creating and teaching weekly exercise sessions; creating and grading exams
- Responsible for the lecture "Linear model predictive control and convex optimization" and "Discretization"

Foundations of machine learning 09/2021 - 03/2022
Student teaching assistant *Aachen, Germany*

Mechanics 09/2017 - 03/2019
Student teaching assistant *Aachen, Germany*

SUPERVISION

Throughout my Ph.D., I have supervised two **master theses**, three **bachelor theses**, one **summer internship**, and one **project work** for international students and students from Aalto University.

POSTERS & TALKS

SIAM UQ26: Invited speaker, "Data-driven uncertainty quantification with safe BO" 03/2026
IEEE Control Workshop: Poster, "Safe BO across noise models: A practical and unified framework" 09/2025
EWRL 2025: Poster, "Safe exploration in reproducing kernel Hilbert spaces" 09/2025
AISTATS 2025: Poster, "Safe exploration in reproducing kernel Hilbert spaces" 05/2025
LUT University: Seminar, "Safe control parameter tuning using Bayesian optimization" 03/2025
Uppsala University Seminar, "Safe exploration in reproducing kernel Hilbert spaces" 10/2024
Finnish AI Day 2024: Talk, "Safe exploration in reproducing kernel Hilbert spaces" 10/2024
SysDO 2024: Talk, "PACSBO: Probably approximately correct safe Bayesian optimization" 09/2024
SysDO 2024: Poster, "Automatic nonlinear MPC approximation with closed-loop guarantees" 09/2024
ARLET workshop ICML 2024: Poster, "Safe exploration in reproducing kernel Hilbert spaces" 07/2024
Finnish AI Day 2023: Poster, "Approximate MPC with kernel-based methods" 10/2023
ELLIS Doctoral Symposium 2023: Poster, "Approximate MPC with kernel-based methods" 08/2023

HONORS

Friedrich-Wilhelm Award: Award from RWTH Aachen University for my master's thesis 10/2023

- Among the top 18 master's and doctoral theses of class 2022 at RWTH Aachen University
- https://www.dsme.rwth-aachen.de/cms/dsme/das-institut/aktuelle-meldungen/~bergpy/abdullah-tokmak-receives-friedrich-wilhe/

Springorium Commemorative Coin: Graduating from RWTH Aachen University with distinction 10/2023
Scholarship: IDEA League funding for my research stay at ETH Zurich 04/2023 - 11/2022
Scholarship: German National Academic Foundation 04/2018 - 11/2022
Dean's List: Among the top 5% of students 2016/2019, 2020/2021