Dennis Erdogan

Curriculum Vitae

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Education

11/2018–now **Ph.D. in Control Engineering**, TU Wien, Vienna, Austria.

- Research Topic: Hardware-in-the-Loop tests of engine and powertrain test beds.

10/2015–11/2018 **M.Sc. in Mechanical Engineering**, TU Wien, Vienna, Austria.

- M.Sc. Thesis: "*Slip control and vibration prevention in vehicles with electric drives*," under supervision of Prof. Stefan Jakubek.
- Specialization on control engineering.

10/2011–10/2015 **B.Sc. in Mechanical Engineering**, TU Wien, Vienna, Austria.

Work Experiences

06/2018–now **Project Assistant**, Institute of Mechanics and Mechatronics, TU Wien, Vienna, Austria.

- Engine test bed system identification.
- Development of new speed and torque control concepts.
- Development of soft sensors for internal engine torque.
- Authoring of scientific publications.
- Teaching activities: Lecturer of exercise courses, preparation of exams, supervision of projects and laboratories, coordination of courses.

10/2017–03/2018 **Master Thesis (Freelancer)**, Magna Powertrain, St. Valentin, Austria.

- Tyre slip control via sliding-mode-control and an empirical approach.
- Flatness-based feedforward control for reduction of oscillations in the powertrain.

Other Activities

12/2015–09/2017 **Head of Controls**, TUW Racing - Rennteam der TU Wien (Formula Student), Vienna, Austria.

- Design and implementation of vehicle dynamic control systems.
- Vehicle software development.
- Vehicle simulations.
- Concept decisions.
- Guiding new members.

Skills

- Strong background in control engineering: Classical control theory and empirical controller tuning as well as state-space control, observer design, model predictive control, feedforward control, 2-DoF control, etc.
- Experienced in implementation of countless controllers in practices.
- Modelling and system identification.
- Matlab/Simulink.
- Programming languages: C, C++, Python.
- Source control: git.
- Experience with microcontroller programming (STM, TI).
- Experience with dSpace Autobox.
- ROS - Robot Operating System.
- Vehicle simulation software: CarSim, AVL VSM.
- CAD: Catia, AutoCAD.
- Image and video editing: GIMP, Inkscape, Shotcut.

Languages

- German–Native
- English–Fluent
- Turkish–Conversational

Honors & Awards

- Best Distance Learning Award 2021: Fundamentals of Automatic Control.
- Best Paper Finalist, 15th Conference on Industrial Electronics & Applications.

Publications

- D. Erdogan, S. Jakubek, C. Mayr and C. Hametner, "Model Predictive Feedforward Control for High-Dynamic Speed Control of Combustion Engine Test Beds", in *IEEE Open Journal of Industry Applications*, published April 16, 2021.
- D. Erdogan, S. Jakubek and C. Hametner, "Model Predictive Control and Disturbance Compensation for Engine Test Beds", *15th IEEE Conference on Industrial Electronics and Applications*, Kristiansand, Norway (held virtually), 9.-13. November 2020.
- D. Erdogan, S. Jakubek, C. Mayr and C. Hametner, "Combustion Engine Test Bed System Identification Under the Presence of Cyclic Disturbances", in *IEEE Transactions on Industrial Electronics*, published online August 18, 2020.