Özge Drama

Ph.D. Candidate in Dynamic Locomotion Group

21 April 1990

https://oezgedrama.me

+49 1525 913 7176

oezge.drama@gmail.com

Mönchstr. 19, 70191 Stuttgart

Short Bio

I am interested in simulation, modeling, control, and optimization in the context of robotics. Currently, I am finalizing my Ph.D. on postural stability in bipedal robotic locomotion at the Max Planck Institute. Prior to my Ph.D., I worked as a research engineer on motor simulation and control at Maxon Motor AG. I received my M.Sc. in Robotics, Systems and Control at ETH Zurich and my B.Sc. in Mechatronics Engineering at Sabancı University, where I focused on control theory in connection to quadruped robot locomotion.

Skills

Languages

- Turkish: Native
- English: Advanced (TOEFL IBT:113)
- German: Level C1
- Japanese: Level A2.2

Programming

- C++, Python
- CI/CD, docker, git, (c)make
- MATLAB, Simulink, LabVIEW
- SolidWorks, SolidCAM, AutoCAD
- Comsol Multiphysics
- Xilinx ISE, dSPACE
- SIMATIC Manager (PLC)

Work Experience

2015-2017 Research and Development Engineer — Sachseln, Switzerland
Maxon Motor AG
- Modeling, simulation, and improvement of DC brush motors
- Research on DC motor loss reduction
- Scanning electron microscopy analysis of motor parts
- Motor selection for customer projects

Education

2017-2021 Ph.D. candidate in Dynamic Locomotion Group — Stuttgart, Germany
Max Planck Institute for Intelligent Systems
Thesis: Control Mechanisms for Postural Stability and Trunk Motion in Bipedal Running: A Study for Humans, Avians, and Bipedal Robots

2017-2021 IMPRS-IS Scholar — Stuttgart, Germany
International Max Planck Research School for Intelligent Systems

2012-2015 M.Sc. in Robotics, Systems and Control — Zurich, Switzerland
ETH Zurich
Thesis: Trajectory Optimization for Fall Recovery of a Quadruped Robot

2008-2012 B.Sc. in Mechatronics Engineering — İstanbul Turkey
Sabancı University with 100% Merit Scholarship
Ranking: $4^{th}/51$
Thesis: ZMP-based Trajectory Generation for a Quadruped Robot

2004-2008 Bursa Anatolian High School — Bursa, Turkey

Publications

Journal Papers

2020 Virtual point control for step-down perturbations and downhill slopes in bipedal running
Drama, Ö. and Badri-Spröwitz, A.
Frontiers in Bioengineering and Biotechnology

2020 Postural stability in human running with step-down perturbations: an experimental and numerical study
Drama, Ö., Vielemeyer J., Badri-Spröwitz, A., and Müller R.
Royal Society Open Science

2020 Trunk pitch oscillations for energy trade-offs in bipedal running birds and robots
Drama, Ö. and Badri-Spröwitz, A.
Bioinspiration & Biomimetics

Conference Papers

2019 Trunk pitch oscillations for joint load redistribution in humans and humanoid robots
Drama, Ö. and Badri-Spröwitz, A.
IEEE-RAS International Conference on Humanoid Robots

2011 ZMP reference trajectory generation with preview control for a quadruped robot
Fidan K., Akbaş T., Eskimez E., Özel S., Adak K., Drama Ö., Konukoğlu M., Yılmaz G., and Erbatur K.
Turkey Automation Conference

Hobbies

- Ballet education: 6 years
- Piano education: 13 years
- Vocal training: 3 years

Presentations and Abstracts

2020 **VP above or below?** A new perspective on the story of the virtual point
Drama Ö. and Badri-Spröwitz A.
Dynamic Walking Conference

2018 **Impact of trunk orientation for dynamic bipedal locomotion**
Drama Ö. and Badri-Spröwitz A.
Dynamic Walking Conference

2017 **Linking mechanics and learning**
Heim S., Grimminger F., Drama Ö., and Badri-Spröwitz A.
Dynamic Walking Conference

Practical Experience

Internships

2013 Sep– Feb — **Robert Bosch GmbH** — Schwieberdingen, Germany
- Implementation a of a field oriented control mechanism for a permanent magnet synchronous machine in real-time
- Electromagnetic inference reduction using spread spectrum technique

2011 Jun–Sep — **DMS (Digitale Mess- und Steuersyseme) AG** — Stuttgart, Germany
- Design of an air ventilation and heating/cooling system for industrial building automation.

2010 Aug–Sep — **Figes A.Ş.** — Bursa, Turkey
- Physical modeling of multidomain systems and control design acceleration using Simulink and Simscape

2010 Jun–Aug — **Bosch San. ve Tic. A.Ş.** — Bursa, Turkey
- Design of an obliqueness measurer for valve body of HDEV series fuel injector using Autodesk Inventor

Summer schools

2020 **MEMMO: Memory of motion summer school** — Virtual

2017 **PhD summer school on learning systems** — ETH Zurich, Switzerland

2015 **Robotics summer school** — Tohoku University, Sendai, Japan

Seminars

2018-2021 **IMPRS-IS soft skill seminars** — Stuttgart, Germany
- Intercultural communication
- Poster design and presentation
- Voice & language: How to communicate more easily and effectively
- Media training: Science communication
- Leadership training

2016 **Embedded control and monitoring using LabVIEW** — Switzerland
National Instruments

2015 **Foundations and applications of small electrical motors** — Germany
WDI Wissensforum, Technical University of Ilmenau

2011-2012 **Proficiency in mechatronics education** — İstanbul, Turkey
FESTO and Boğaziçi University

2009 **IMES AutoCAD education** — Bursa, Turkey