Panagiotis Anagnostaras

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BRIEF

Robotics software engineer with a background in mechanical engineering. Passionate about dynamics, controls, reinforcement learning, numerical optimization and object-oriented programming.
Skilled in C++, Python, ROS, Git.

CURRENT POSITION

Robotics Software Engineer 8/2023-Present
Kemaro AG, Eschlikon, Switzerland

- Main developer of the planning and control software stack
- Conceptualizing, designing, implementing and testing software for path planning, obstacle avoidance and navigation for an autonomous mobile robot
- Contributing to the continuous integration and testing methods of the team, sensor evaluation and integration, front-end web development, state machines logic
- Tools: ROS, C++, Python, Git, Docker, Acados, React

EDUCATION

Master of Science, Robotics, Systems and Control 9/2020-5/2023
ETH Zurich, Switzerland

- **GPA**: 5.78/6 (above 5.75/6 is a distinction)
- **Master Thesis**: "Learning to track a model based controller from randomized footholds" at the Robotic Systems Lab supervised by F. Jenelten, N. Rudin and Prof. M. Hutter
  Brief: Trained a reinforcement learning policy to track footholds in simulation and deployed it to ANYmal
  Grade: 5.75/6
  Keywords: reinforcement learning, legged robots, foothold planning & tracking
  Tools: Python, Pytorch, Isaac Gym
- **Semester Project**: "Computationally efficient robust MPC using optimal disturbance-affine feedback" at the Automatic Control Lab supervised by A. Parsi, Dr. A. Iannelli and Prof. R. S. Smith
  Brief: Formulated a convex optimization problem for minimizing the constraint tightening in robust MPC for linear systems
  Grade: 6/6
  Keywords: robust model predictive control, convex optimization, linear systems under uncertainty
  Tools: Matlab, Yalmip, MPT3
- **Courses**: Linear System Theory, Robot Dynamics, Nonlinear Dynamics and Chaos, Dynamic Programming and Optimal Control, Control Systems, Model Predictive Control, Intro. to Machine Learning, Computational Models of Motion, Large Scale Convex Optimization, Embedded Control Systems

Diploma (five-year integrated master), Mechanical Engineering 9/2014-9/2019
Aristotle University of Thessaloniki, Greece

- **GPA**: 8.66/10 (above 8.5/10 is a distinction)
- **Diploma Thesis**: "Co-simulation of optimal control and dynamic analysis applied to a quadcopter" at the Machine Dynamics Laboratory supervised by Prof. S. Natsiavas
  Brief: Complete system analysis (vibrations, stresses, topology optimization, controller performance) applied to a quadcopter
  Grade: 10/10
  Keywords: modal analysis, topology optimization, LQR control
  Tools: Altair's suite (Optistruct, MotionSolve, Activate)
- **Specialization**: Design and Structures
- **Core courses**: Dynamics, Controls, Numerical Methods, FEM, Mechanical Design, CAD-CAE

PREVIOUS POSITIONS

Research and Development Intern 11/2021-7/2022
Hitachi Energy, Zurich, Switzerland

- Responsible for mechanical and system simulations
- Development of Python and Dymola based, in-house tools for the simulation of high voltage circuit breakers
- Development of Python tools for the visualization and analysis of lab measurements
- Introducing and motivating the use of neural networks to the team
- Tools: Python, Dymola, Excel, Git

Industrial Mechanical Engineer Intern 7/2018-9/2018
Karelia Tobacco Company, Kalamata, Greece

- Rotation through the different departments
- Assisting technicians in the production line

PUBLICATIONS

Parsi A., **Anagnostaras P.**, Iannelli A., Smith R. S. "Computationally efficient robust MPC using optimized constraint tightening", 61st IEEE Conference on Decision and Control, arxiv link.

LANGUAGES

- English: excellent, C2 Proficiency (Cambridge University, 2016), IELTS 7.5/9 (2019)
- German: low, B1 Goethe Zertifikat (2011), actively learning
- Greek: mother tongue

AWARDS

- General Arnaoutis Foundation scholarship, 2020: scholarship for postgraduate studies at ETH
- Reciprocal scholarship, 2017: Department of mechanical engineering AUTH for my academic performance
- Scholarships, 2017: Two scholarships for my performance at national university entrance exams (19.603/20.000, <1%)

SOFTWARE TOOLS

C++, Python, ROS, Matlab, Git, Latex

MILITARY SERVICE

Nine-month mandatory military service in Greek Army, Technical Corps 10/2019-7/2020

REFERENCES

- Hitachi Energy
- Prof. Marco Hutter