Anastasia Mavrommati

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SUMMARY OF QUALIFICATIONS

Expertise: Robotics, Autonomous Systems, Controls, Technology Integration, Project Management

EDUCATION

Northwestern University, Evanston, IL
Ph.D. in Mechanical Engineering (Robotics), GPA: 4.00/4.00 — 2017
M.S. in Mechanical Engineering (Robotics), GPA: 4.00/4.00 — 2015

Kellogg School of Management, Northwestern University, Evanston, IL — Summer 2016
Certificate in Management for Scientists and Engineers

University of Patras, Patras, Greece — 2012
Diploma (B.S./M.S.) in Electrical and Computer Engineering, GPA: 8.83/10.0 (ranked 1^{st} in class)

RESEARCH AND PROFESSIONAL EXPERIENCE

MathWorks — March 2019 - present
Senior Robotics Research Scientist — *Natick, MA*

· I work at the intersection of industry and academia, building a bridge between MathWorks engineering and academic research, via advanced research examples development, and deep research engagement and support. My technical focus is on advanced algorithms and solutions for robotic manipulation.

Schlumberger-Doll Research Center (SDR) — June 2017 - March 2019
Robotics Research Scientist — *Cambridge, MA*

· Served as Principal Investigator on technology transfer research projects for robotic manipulation and autonomous aerial inspection.

Neuroscience and Robotics Laboratory (N×R) — 2012 - 2017
Research Assistant, `http://stacymav.wixsite.com/mysite` — *Northwestern University, Evanston,IL*

· Developed and experimentally validated a real-time MPC algorithm for autonomous robotic exploration using information theory (2 publications).

· Formulated and experimentally validated a real-time algorithm for optimal hybrid control on a customized overhead crane using switched system theory (2 publications).

· Presented my work in research conferences.

EksoBionics — Winter 2014
Research Intern — *Richmond, CA*

· Implemented an algorithm in ROS that allows robotic exoskeletons to assist standing balance in a rehabilitation setting (2 publications).

Applied Networked Mechatronic Systems Group (ANeMoS) — 2010 - 2012
Research Assistant — *University of Patras, Patras, Greece*

· Designed, built and controlled a snake-like modular robotic manipulator with custom embedded electronics (2 publications).

Public Power Corporation S.A. — 2008
Intern at the Western Sector Technical Support Centre — *Patras, Greece*

· Assisted senior engineers in diagnosing and resolving major power outages.

SKILLS

Operating Systems & Software: Linux, Windows, Robot Operating System (ROS), GAZEBO, Unreal Game Engine, ArduPilot, PX4, Microsoft Office, LaTeX

Programming Languages & Version Control: C/C++, MATLAB & Simulink, Python, Mathematica, Assembly, Java, FANUC robot programming (certified), Git, Docker

Embedded systems: Raspberry Pi, Odroid XU4, Intel Aero, NVIDIA TX2/TX1, Arduino, Pixhawk

SELECTED AWARDS AND HONORS

Royal E. Cabell Terminal Year Fellowship — 2016
Awarded by the Graduate School to outstanding final-year Ph.D. students of Northwestern University

Best Presentation in Session Award 2014
American Control Conference

Walter P. Murphy Fellowship 2012
Awarded to outstanding first-year Ph.D. students of Northwestern University

State Scholarships Foundation Excellence Award (IKY) 2006
Ranked 1^{st} in EECS Department Entrance Exams at University of Patras, Greece

EFG Eurobank Fellowship 2006
Ranked 4^{th} *nationwide* in Panhellenic University Entrance Exams

SELECTED PUBLICATIONS

Journal articles (My Google Scholar Profile)

Anastasia Mavrommati, Emmanouil Tzorakoleftherakis, Ian Abraham and Todd D. Murphey, "Real-Time Area Coverage and Target Localization using Receding-Horizon Ergodic Control for Nonlinear Dynamics", *IEEE Transactions on Robotics*, 34(1), 62-80, 2018

Anastasia Mavrommati, Jarvis A. Schultz and Todd D. Murphey, "Real-Time Dynamic Mode Scheduling Using Single-Integration Hybrid Optimization", *IEEE Transactions on Automation Science and Engineering* , vol.PP, no.99, pp.1-14, 2016

Emmanouil Tzorakoleftherakis, Anastasia Mavrommati and Anthony Tzes, "Design and Implementation of a Binary Redundant Manipulator with Cascaded Modules", *ASME Journal of Mechanisms and Robotics*, 8(1): 011002-011002-10, 2015

Peer-Reviewed Conference Proceedings

Ian Abraham, Anastasia Mavrommati, and Todd D. Murphey, "Data-Driven Measurement Models for Active Localization in Sparse Environments", *Robotics: Science and Systems (RSS)*, 2018

Anastasia Mavrommati, and Todd D. Murphey, "Automatic Synthesis of Control Alphabet Policies", *IEEE International Conference on Automation Science and Engineering*, pp. 313-320, 2016

Anastasia Mavrommati, Alex Ansari, and Todd D. Murphey, "Optimal Control-On-Request: An Application in Real-Time Assistive Balance Control", *IEEE International Conference on Robotics and Automation (ICRA)*, pp. 5928-5934, 2015

Book Chapter

Anastasia Mavrommati, Alex Ansari, and Todd D. Murphey. "Assistive Optimal Control-on-Request with Application in Standing Balance Therapy and Reinforcement." *Trends in Control and Decision-Making for Human-Robot Collaboration Systems*, Springer, Cham, 131-151, 2017

TEACHING EXPERIENCE

Theory of Machines - Dynamics Fall 2014, 2015
Teaching Assistant *Northwestern University, Evanston, IL*

- Rated 5.1/6 for overall quality of instruction in Fall 2014 student evaluations.

Everything is the Same: Modeled Systems Fall 2013, Spring 2014
Teaching Assistant *Massive Open Online Course at Coursera*

- Designed/demonstrated assignments, participated in on-campus meetings, monitored discussion forums.

PROFESSIONAL SERVICE AND LEADERSHIP

International Conference on Robotics and Automation (ICRA) 2020 - 2021
Associate Editor

IEEE RAS Boston Chapter 2020 - 2021
Chair

Learning for Dynamics & Control Conference (L4DC) 2020 - 2021
Program Committee Member

Women in Mechanical Engineering Society 2013 - 2015
Co-Founder, Member *Northwestern University, Evanston, IL*

Museum of Science and Industry National Robotics Week, 2013-2016
Volunteer *Chicago, IL*