George P. Kontoudis

✆ (+1) 540 449-7026 ◇ ✉ gpkont@vt.edu

3015 Torgersen Hall, Blacksburg, VA 24061, USA

www.georgekontoudis.com ◇ *Updated: January 17, 2020*

EDUCATION

PhD, Virginia Tech, USA   *Present*
Bradley Department of Electrical and Computer Engineering
Advisor: Dr. Daniel Stilwell
Area of Focus: Systems, Controls, and Signals
Current GPA: 4.0

MSc, Virginia Tech, USA   *2018*
Department of Mechanical Engineering
Advisor: Dr. Tomonari Furukawa
Co-advisor: Dr. Kyriakos G. Vamvoudakis
GPA: 4.0

Diploma (MSc), National Technical University of Athens, Greece   *2016*
School of Mechanical Engineering
Advisor: Dr. Kostas J. Kyriakopoulos
Co-advisor: Dr. Minas Liarokapis
Grade: 7.76/10 (*top 20%*)

BSc, University of West Attica, Greece   *2010*
Department of Mechanical Engineering

RESEARCH EXPERIENCE

Graduate Research Assistant   *August 2018 - Present*
Center for Marine Autonomy and Robotics
Virginia Tech, USA

Graduate Research Assistant   *May 2017 - August 2018*
Computational Multiphysics Systems Laboratory
Virginia Tech, USA

Member & Research Associate   *September 2014 - Present*
The OpenBionics Initiative

Research Assistant   *April 2014 - March 2016*
Control Systems Laboratory
National Technical University of Athens, Greece

TEACHING EXPERIENCE

Graduate Teaching Assistant   *August 2016 - May 2017*
Department of Mechanical Engineering, Virginia Tech, USA

· Lectured 80 students in a senior level, control systems lab.   *Fall 2016*
· Guided 20 students in a series of 8 junior level, mechanical engineering labs.   *Spring 2017*

AWARDS & HONORS

NSF Student Travel Grant (WuWNet)   *USA 2019*
2×Virginia Tech GSA Travel Fund Award (Humanoids, ICORR)   *USA 2019*
Student Travel Award (ACC)   *USA 2019*
NTUA Thomaideion Award   *Greece 2016*
Hackaday Prize, 2nd place (among 900 projects)   *USA 2015*

Robotdalen Innovation Award, 1st place   *Sweden 2015*
IEEE/RAS Student Travel Award (IROS)   *Germany 2015*

PROFESSIONAL EXPERIENCE

Senior Mechanical Engineer   *March 2016 - June 2016*
Heliix Inc., Athens, Greece

· Worked on the product design and development of a waste heat recovery device

Site Supervisor   *September 2013 - August 2015*
Sychem S.A., Athens, Greece

· Provided guidance to industrial maintenance crew of 6 people for a desalination plant

Mechanical Engineer   *October 2010 - September 2013*
Sychem S.A., Athens, Greece

· Monitored and commissioned desalination plants

Aircraft Maintenance Engineer Trainee   *May 2008 - January 2010*
Olympic Aviation, Athens, Greece

· Performed engineering work of maintenance and modifications on aircrafts

PUBLICATIONS

Referred Journal Publications

[J1] **George P. Kontoudis**, Kyriakos G. Vamvoudakis, "Kinodynamic Motion Planning with Continuous-Time Q-Learning: An Online, Model-Free, and Safe Navigation Framework," *IEEE Transactions on Neural Networks and Learning Systems (TNNLS)*, 2019. **[Impact factor: 11.683]**

[J2] **George P. Kontoudis**, Minas Liarokapis, Kyriakos G. Vamvoudakis, Tomonari Furukawa, "An Adaptive Actuation Mechanism for Anthropomorphic Robot Hands," *Frontiers in Robotics and AI*, 2019.

Referred Conference Publications

[C1] **George P. Kontoudis**, Zirui Xu, Kyriakos G. Vamvoudakis, "Real-Time Kinodynamic Motion Planning in Unpredictable Dynamic Environments using Deep Intermittent Q-Learning," *American Control Conference (ACC)*, Denver, USA, 2020. *(accepted)*

[C2] **George P. Kontoudis**, Daniel J. Stilwell, "A Comparison of Kriging and Cokriging for Estimation of Underwater Acoustic Communication Performance," *ACM International Conference on Underwater Networks and Systems (WuWNet)*, Atlanta, USA, 2019. **[Full-length, acceptance rate 38%]**

[C3] **George P. Kontoudis**, Minas Liarokapis, Kyriakos G. Vamvoudakis, "An Adaptive, Humanlike Robot Hand with Selective Interdigitation: Towards Robust Grasping and Dexterous, In-Hand Manipulation," *IEEE-RAS International Conference on Humanoid Robots (Humanoids)*, Toronto, Canada, 2019.

[C4] **George P. Kontoudis**, Minas Liarokapis, Kyriakos G. Vamvoudakis, "A Compliant, Underactuated Finger for Anthropomorphic Hands," *IEEE/RAS-EMBS Inter. Conference on Rehabilitation Robotics (ICORR)*, Toronto, Canada, 2019.

[C5] **George P. Kontoudis**, Kyriakos G. Vamvoudakis, "Robust Kinodynamic Motion Planning using Model-Free Game-Theoretic Learning," *American Control Conference (ACC)*, Philadelphia, USA, 2019.

[C6] Kyriakos D. Tsoukalas, **George P. Kontoudis**, Kyriakos G. Vamvoudakis, "Active-Bayesian Learning for Cooperation Connectivity in Dynamic Cyber-Physical-Human Systems," *IEEE Symposium on Adaptive Dynamic Programming and Reinforcement Learning (ADPRL)*, Honolulu, USA, 2017. **[Invited submission]**

[C7] **George P. Kontoudis**, Minas Liarokapis, Agisilaos G. Zisimatos, Christoforos I. Mavrogiannis, Kostas J. Kyriakopoulos, "Open-Source, Anthropomorphic, Underactuated Robot Hands with a Selectively Lockable Differential Mechanism: Towards Affordable Prostheses," *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Hamburg, Germany, 2015.

Theses

[T1] **George P. Kontoudis**, "Adaptive, Anthropomorphic Robot Hands for Grasping and In-Hand Manipulation," *Master Thesis, Mechanical Engineering, Virginia Tech*, Blacksburg, Virginia, USA, December 2018.

[T2] **George P. Kontoudis**, "Design and Development of an Underactuated, Anthropomorphic Robot Hand," *Diploma Thesis, Mechanical Engineering, National Technical University of Athens,* Athens, Greece, March 2016. (in Greek)

Other Publications

[O1] **George P. Kontoudis**, Minas Liarokapis, Agisilaos G. Zisimatos, Christoforos I. Mavrogiannis, Kostas J. Kyriakopoulos, "How to Create Affordable, Anthropomorphic, Light-Weight Prosthetic Hands," *Control Systems Lab, National Technical University of Athens,* Athens, Greece, October 2015.

[O2] Agisilaos G. Zisimatos, Minas Liarokapis, Christoforos I. Mavrogiannis, **George P. Kontoudis**, Kostas J. Kyriakopoulos, "How to Create Affordable, Modular, Light-Weight, Underactuated, Compliant Robot Hand," *Control Systems Lab, National Technical University of Athens,* Athens, Greece, January 2015.

SERVICE ACTIVITIES

Reviewer, Journals

· IEEE Transactions on Neural Networks and Learning Systems (TNNLS)	*2019, 2020*
· IEEE Control Systems Letters (L-CSS)	*2019, 2020*
· IEEE Robotics and Automation Letters (RA-L)	*2019*
· International Journal of Advanced Robotic Systems (IJARS)	*2015, 2016*

Reviewer, Conferences

· IEEE International Conference on Robotics and Automation (ICRA)	*2018-2020*
· IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)	*2018, 2019*
· IEEE Conference on Decision and Control (CDC)	*2019*
· IEEE International Conference on Automation Science and Engineering (CASE)	*2019*
· IEEE-RAS International Conference on Humanoid Robots (Humanoids)	*2019*
· American Control Conference (ACC)	*2018*
· IEEE International Conference on Biomedical Robotics and Biomechatronics (BioRob)	*2018*
· Mediterranean Conference on Control and Automation (MED)	*2018*

TALKS & PRESENTATIONS

· "A Comparison of Kriging and Cokriging for Estimation of Underwater Acoustic Communication Performance," *ACM International Conference on Underwater Networks and Systems (WuWNet)*, Atlanta, USA, 2019. **[Oral Presentation]**

· "An Adaptive, Humanlike Robot Hand with Selective Interdigitation: Towards Robust Grasping and Dexterous, In-Hand Manipulation," *Workshop on New Challenges in Humanoid Grasping and Manipulation in IEEE-RAS International Conference on Humanoid Robots (Humanoids)*, Toronto, Canada, 2019. **[Oral Presentation - Invited Talk]**

· "An Adaptive, Humanlike Robot Hand with Selective Interdigitation: Towards Robust Grasping and Dexterous, In-Hand Manipulation," *IEEE-RAS International Conference on Humanoid Robots (Humanoids)*, Toronto, Canada, 2019. **[Poster Presentation]**

· "Robust Kinodynamic Motion Planning using Model-Free Game-Theoretic Learning," *American Control Conference (ACC)*, Philadelphia, USA, 2019. **[Oral Presentation]**

· "A Compliant, Underactuated Finger for Anthropomorphic Hands," *IEEE/RAS-EMBS International Conference on Rehabilitation Robotics (ICORR)*, Toronto, Canada, 2019. **[Poster Presentation]**

· "Adaptive, Anthropomorphic Robot Hands for Grasping and In-Hand Manipulation," *Department of Mechanical Engineering, Virginia Tech*, Blacksburg, Virginia, USA, December 2018. **[Master's Defense]**

· "Evaluation Strategies of Adaptive, Anthropomorphic Robot Hands for Dexterous In-Hand Manipulation: Early Results," *National Institute of Standards and Technology (NIST)*, USA, 2018. **[Invited Talk]**

· "Open-Source, Anthropomorphic, Underactuated Robot Hands with a Selectively Lockable Differential Mechanism: Towards Affordable Prostheses," *IEEE/RSJ International Conference on Intelligent Robots and Systems **(IROS)***, Hamburg, Germany, 2015. **[Oral Presentation]**

SKILLS

Languages	English, Greek(native)
Operating Systems	Windows, Linux, ROS
Design and Simulation Software	Solidworks, AutoCAD, ANSYS, Slic3r, ProCAST, PSpice, Cura
Programming	MATLAB, R, Python, C/C++, HTML/CSS, LaTeX
Other Skills	3D printing, Laser cutting

MEMBERSHIPS & SOCIETIES

Memberships

· IEEE - Student Member	*2015 - Present*
· ASME - Student Member	*2016 - Present*

Societies

· IEEE - Robotics and Automation Society (RAS)	*2015 - Present*
· IEEE - Control Systems Society (CSS)	*2017 - Present*

RELEVANT GRADUATE COURSEWORK

Control	AOE5244-Optimization Techniques, AOE5984-SS:Cyber-Physical Systems & Distributed Control, AOE5774-Nonlinear Systems Theory, AOE6544-Linear Control Theory, ME6574-Adaptive Control Systems
Robotics	ME5984-SS:Advanced Experimental Robotics, ME5524-Bayesian Robotics, ME5984-SS:Motion Planning Analysis, ECE5984-SS:Advanced Robot Motion Planning
Dynamics	AOE5204-Vehicle Dynamics & Control
Mathematics	MATH5414-Model Reduction of Dynamical Systems, MATH3324-Advanced Calculus
Statistics	STAT5544-Spatial Statistics