

# George P. Kontoudis

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## EDUCATION

<b>PhD, Virginia Tech, USA</b> Kevin T. Crofton Department of Aerospace and Ocean Engineering Advisor: Prof. Daniel Stilwell Co-advisor: Prof. Kyriakos G. Vamvoudakis Area of Specialization: Dynamics and Control Current GPA: 4.0	<i>Present</i>
<b>MSc, Virginia Tech, USA</b> Department of Mechanical Engineering Advisor: Prof. Tomonari Furukawa Co-advisor: Prof. Kyriakos G. Vamvoudakis GPA: 4.0	<i>2018</i>
<b>Diploma (MSc), National Technical University of Athens, Greece</b> School of Mechanical Engineering Advisor: Prof. Kostas J. Kyriakopoulos Co-advisor: Prof. Minas Liarokapis Grade: 7.76/10 ( <i>top 20%</i> )	<i>2016</i>
<b>BSc, Piraeus University of Applied Sciences, Greece</b> Department of Mechanical Engineering	<i>2010</i>

## RESEARCH EXPERIENCE

<b>Graduate Research Assistant</b> Autonomous Systems and Control Laboratory Virginia Tech, USA	<i>August 2018 - Present</i>
<b>Graduate Research Assistant</b> Computational Multiphysics Systems Laboratory Virginia Tech, USA	<i>May 2017 - August 2018</i>
<b>Member &amp; Research Associate</b> The OpenBionics Initiative	<i>September 2014 - Present</i>
<b>Research Assistant</b> Control Systems Laboratory National Technical University of Athens, Greece	<i>April 2014 - March 2016</i>

## TEACHING EXPERIENCE

<b>Graduate Teaching Assistant</b> Department of Mechanical Engineering, Virginia Tech, USA	<i>August 2016 - May 2017</i>
· Lectured 80 students in a senior level, control systems lab.	<i>Fall 2016</i>
· Guided 20 students in a series of 8 junior level, mechanical engineering labs.	<i>Spring 2017</i>

## AWARDS & HONORS

NTUA Thomaideion Award	<i>Greece 2016</i>
Hackaday Prize, 2 <sup>nd</sup> place (among 900 projects)	<i>USA 2015</i>
Robotdalen Innovation Award, 1 <sup>st</sup> place	<i>Sweden 2015</i>
IEEE/RAS Student Travel Award (IROS)	<i>Germany 2015</i>

## PROFESSIONAL EXPERIENCE

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### Senior Mechanical Engineer

Heliix Inc., Athens, Greece

March 2016 - June 2016

- Worked on the product design & development of a waste heat recovery device

### Site Supervisor

Sychem S.A., Athens, Greece

September 2013 - August 2015

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

### Mechanical Engineer

Sychem S.A., Athens, Greece

October 2010 - September 2013

- Monitored and commissioned desalination plants

### Aircraft Maintenance Engineer Trainee

Olympic Aviation, Athens, Greece

May 2008 - January 2010

- Performed engineering work of maintenance and modifications on aircrafts

## PUBLICATIONS

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### 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.

### Referred Conference Publications

- [C1] **George P. Kontoudis**, Minas Liarokapis, Kyriakos G. Vamvoudakis, “A Compliant, Underactuated Finger for Anthropomorphic Hands,” *IEEE/RAS-EMBS International Conference on Rehabilitation Robotics (ICORR)*, Toronto, Canada, 2019. (*accepted*)
- [C2] **George P. Kontoudis**, Kyriakos G. Vamvoudakis, “Robust Kinodynamic Motion Planning using Model-Free Game-Theoretic Learning,” *American Control Conference (ACC)*, 2019. (*accepted*)
- [C3] 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 paper**)
- [C4] **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

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### Reviewer, Journals

- IEEE Control Systems Letters (L-CSS) 2019
- IEEE Robotics and Automation Letters (RA-L) 2019
- International Journal of Advanced Robotic Systems (IJARS) 2015, 2016

### Reviewer, Conferences

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

## TALKS & PRESENTATIONS

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- “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.

## SKILLS

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

## RELEVANT GRADUATE COURSEWORK

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<b>Robotics</b>	ME5984-SS:Advanced Experimental Robotics, ME5524-Bayesian Robotics, ME5984-SS:Motion Planning Analysis, ECE5984-SS:Advanced Robot Motion Planning
<b>Control Theory</b>	AOE5244-Optimization Techniques, AOE5984-SS:Cyber-Physical Systems & Distributed Control, AOE5774-Nonlinear Systems Theory, AOE6544-Linear Control Theory, ME6574-Adaptive Control Systems
<b>Dynamics</b>	AOE5204-Vehicle Dynamics & Control
<b>Mathematics</b>	MATH3324-Advanced Calculus

## MEMBERSHIPS & SOCIETIES

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### 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