

## Georgios P. Kontoudis

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**Research interests:** Robot Hands Design, Prosthetics, Robot Kinematics, Mechanisms, Grasping and Manipulation

### EDUCATION

**MSc, Mechanical Engineering** 2012-2015

**Diploma Thesis Title: “Anthropomorphic, Underactuated, Compliant Robot Hands with a Selectively Lockable Differential Mechanism: Towards Affordable Prostheses”**

5-year Diploma Degree equivalent to MSc

Ranked at 5th Semester through qualifying examinations (2nd out of 90 candidates)

Mechanical Design Concentration

Control Systems Laboratory

School of Mechanical Engineering

National Technical University of Athens (NTUA), Greece

Advisor: Prof. Kostas J. Kyriakopoulos

Co-Advisor: Dr. Minas V. Liarokapis (Yale University - USA)

**BSc, Mechanical Engineering** 2005-2010

**Thesis Title: “Analysis, Review and Optimization of Compression and Air-Conditioning System at Short Take Off and Landing (STOL) Aircrafts”**

Energy Engineering Concentration

Department of Mechanical Engineering

School of Engineering

Piraeus University of Applied Sciences, Athens, Greece

### RESEARCH EXPERIENCE

**Graduate Research Assistant** April 2014 - Present

**Research on Anthropomorphic Robot Hands under the Integrated Project no.248587, “THE Hand Embodied”, (supported by the European Commission) within the FP7-ICT-2009-4-2-1 program Cognitive Systems and Robotics**

NeuroRobotics Group

Control Systems Laboratory

School of Mechanical Engineering

National Technical University of Athens (NTUA), Greece

Advisor: Prof. Kostas J. Kyriakopoulos

Co-Advisor: Dr. Minas V. Liarokapis (Yale University - USA)

## PROFESSIONAL EXPERIENCE

### Site Supervisor

*September 2013 - Present*

Sychem S.A., Athens, Greece

Supervisor of Reverse Osmosis Desalination Plant with capacity 8000 m<sup>3</sup>/day, at the refineries of Motor Oil Hellas

Responsibilities include:

- Managing projects using engineering principles and techniques
- Prepare material, cost and timing estimates, reports and design specifications for electromechanical systems
- Supervise, inspect the installation, modification and commissioning of electromechanical systems
- Develop maintenance standards, schedules & programs
- Provide guidance to industrial maintenance crew

### Mechanical Engineer

*October 2010 - September 2013*

Sychem S.A., Athens, Greece

Responsibilities include:

- Investigate mechanical & electrical failures or unexpected maintenance problems
- Monitoring and commissioning of desalination plants
- Analyze vibrations of machines
- Handle deadlines, variable workloads, and being on call 24-hours

### Aircraft Maintenance Engineer Trainee

*May 2008 - January 2010*

Olympic Airways, Athens, Greece

Apprentice as a Mechanical and Aircraft Engineer unlicensed part-66. Line and Base maintenance including A,B,C and D maintenance checks. Olympic Aviation Aircraft types: Dash 8-100 and ATR 42/72

Responsibilities include:

- Perform engineering work of maintenance and modification of aircraft for flight
- Carrying out assigned work tasks under the supervision of the Senior LAME and independent inspections, according to the Maintenance System Manual and/or the Customer System of Maintenance requirements.

## AWARDS & HONORS

### Robotdalen Innovation Award

*Sweden 2015*

Robotdalen is a Swedish robotics initiative enabling commercial success of new ideas and research within robotics. One of the three winners, exact ranking order will be announced on September 3, 2015.

## PUBLICATIONS

### Refereed Conference Papers

[1] **George P. Kontoudis**, Minas V. Liarokapis, Agisilaos G. Zisimatos, Christoforos I. Mavrogiannis and 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.

[BibTeX][PDF][Video]

### Technical Reports

[1] Agisilaos G. Zisimatos, Minas V. Liarokapis, Christoforos I. Mavrogiannis, **George P. Kontoudis** and Kostas J. Kyriakopoulos, “How to Create Affordable, Modular, Light-Weight, Underactuated, Compliant Robot Hand”, *Control Systems Lab, School of Mechanical Engineering, National Technical University of Athens*, January 2015.

[BibTeX][PDF]

## SERVICE ACTIVITIES

### Member

OpenBionics is an open-source initiative for the development of affordable, light-weight, modular, underactuated robot hands and prosthetic devices, that can be easily reproduced using off-the-shelf materials. More information can be found at the following url:

<http://www.openbionics.org/>

## SKILLS

**Languages:** English, Greek(native)

**Operating Systems:** Windows, Linux

**Design and Simulation Software:** SolidWorks, SolidCAM, AutoCAD, ANSYS Mechanical, ANSYS Workbench, ProCAST, PSpice, Slic3r

**Programming Languages:** C, Matlab, Arduino, V+

**Software Applications:** L<sup>A</sup>T<sub>E</sub>X, Adobe Photoshop/Premiere Pro

**Other Software:** Ms Office

**Other Skills:** Laser cutter, 3D printer

## MEMBERSHIPS & SOCIETIES

### Memberships

IEEE - Student Member (*2015 - present*)

### Societies

IEEE - Robotics and Automation (*2015 - present*)

Scientific Society of Technological Education Engineers (*2010 - present*)

## MEDIA COVERAGE

**Dimokratia News:** “Interview of Minas Liarokapis regarding OpenBionics initiative”, *July 12, 2015*

**GoodNews.gr:** “The most Affordable Prosthetic Hands will be made in Greece”, *May 8, 2015*

**RoboHub:** “OpenBionics prosthetic hands: Open source, affordable, lightweight, anthropomorphic”, *April 9, 2015*

**Hackaday:** “Hackaday - Prosthetics Projects”, *April 3, 2015*

**3D Print:** “OpenBionics Open Source Robotic Prosthetic Hand can Execute 144 Different Grasps & Costs Under \$200”, *March 18, 2015*

**3ders:** “Greek OpenBionics unveils affordable, light-weight 3D printed bionic hands with 144 grasp movements”, *March 18, 2015*

**Other Interests & Hobbies:** Kick Boxing, Basketball, Scouting, Reading, Travelling, Music