

# Fotios Dimeas

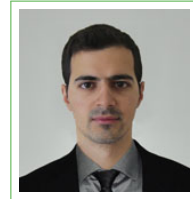
*Mechanical Engineer*

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## Education

- 2006–2012 **Mechanical Engineer**, *Department of Mechanical Engineering & Aeronautics, University of Patras, Grade 7.5/10.*
- 2012–present **PhD Candidate**, *Robotics Group, Department of Mechanical Engineering & Aeronautics, University of Patras.*

## Master thesis

- title *Design and development of a power assisted device*
- supervisors Nikos Aspragathos
- description In this thesis the aim was to design a lifting mechanism which withdraws the limitation of conventional systems (e.g. manually operated cranes) and allows a person to handle an object with direct manual manipulation, reducing the perceived weight and facilitating the operation of a heavy load. The developed system combined mechanical, electrical and automatic control components. A digital control system was developed that could measure the suspended load and by detecting the operator's applied force it could drive the electric motor of the hoist.

## PhD thesis (*ongoing*)

- title *Development of control systems for human-robot physical interaction in object co-manipulation*
- supervisors Nikos Aspragathos
- description The problem of physical human-robot interaction is investigated when the robot and the human co-operate to manipulate an object. More specifically, the key challenges include the online identification of the human impedance during the manipulation, the optimal tuning of the robot admittance parameters for efficient and intuitive cooperation and the stability margins determination for safe interaction.

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## Experience

### Research

- 2012–present **R&D, Robotics Group**, University of Patras.  
Participation on various small research projects in the robotics field.  
Projects:
- Robot collision detection using fuzzy identification
  - Development of a gripper for efficient strawberry picking

### Education

- 2012–present **Lab instructor**, *Dept. of Mechanical Engineering & Aeronautics*, University of Patras.  
Instructor on the laboratory exercise of the following undergraduate courses:
- Electrical Technology
  - Mechatronics
  - Robotics

### Management

- 2012–present **Robotics Club**, *Dept. of Mechanical Engineering & Aeronautics*, University of Patras.  
Technical Director and General Manager of the Polymechnon team for the participation in the Robocup Rescue competition

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## Training

### Seminars

- 20–24 Aug 2012 **ROS RoboCup Rescue Summer school 2012**, *TU Graz*, Graz, Austria.  
Expert track
- 8–12 Oct 2012 **Programming Lightweight Robot**, *KUKA College*, Gersthofen, Germany.  
Advanced programming of KUKA LWR IV robot

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## Languages

Greek	<b>Native Language</b>	
English	<b>Excellent (C2)</b>	<i>Proficiency degree</i>
German	<b>Good (A2)</b>	<i>Goethe Institute degree</i>

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## Computer skills

- OS Windows, Linux
- software Catia V5, Solidworks, Inventor, Autocad, Matlab, Labview, MS Office, OpenOffice
- programming C, C++, python, php, L<sup>A</sup>T<sub>E</sub>X

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## Publications

### Journals

- 2013 Fotios Dimeas, Panagiotis Koustoumpardis, and Nikos Aspragathos. Admittance neuro-control of a lifting device to reduce human effort. *Advanced Robotics*, 27(13):1013–1022, jun 2013

## Conferences

- 2013 Fotios Dimeas, L D Avendano, Elpida Nasiopoulou, and Nikos Aspragathos. Robot Collision Detection based on Fuzzy Identification and Time Series Modeling. In *RAAD 2013*, 2013
- Fotios Dimeas, Dhionis V Sako, Vassilis C Moulianitis, and Nikos Aspragathos. Towards designing a robot gripper for efficient strawberry harvesting. In *RAAD 2013*, 2013
- 2012 Fotios Dimeas, Panagiotis Koustoumpardis, and Nikos Aspragathos. Control of a Power Assisted Lifting Device. In *RAAD 2012*, pages 277–283, 2012