

# CURRICULUM VITAE

## **Dr Manolis Chiou**

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**Research interests:** My work is highly multidisciplinary in the overlapping area between Artificial Intelligence, Human-robot interaction and human factors; aiming at improving remotely operated robots (e.g. disaster response, hazardous environment inspection). I am particularly interested in actively assisting the human operator with the use of Human-Initiative and Mixed-Initiative variably autonomy control.

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## **Academic history**

- **January 2017 - May 2017:** Research fellow; School of Metallurgy and Materials, University of Birmingham; EPSRC funded UK - S. Korea civil nuclear project “Robotic system for retrieval of contaminated materials from hazardous zones”.
  - **January 2017:** PhD in Robotics and Artificial Intelligence (AI); co-supervised between the School of Computer Science, School of Psychology and School of Mechanical Engineering, University of Birmingham. PhD funded and co-supervised by UK’s ministry of defense, defense science and technology laboratory.
  - **March 2013 - August 2013:** Research assistant on the robotic arm Brain-Computer-Interface project. School of Psychology, University of Birmingham. Research for controlling a robotic arm with signals from electroencephalography (EEG).
  - **September 2012:** MSc in Computational Intelligence; University of Sheffield. Joint degree between Dept. of Automatic Control and Systems Engineering, Dept. of Computer Science and Dept. of Psychology.
  - **June 2011:** Ptychion in Automation Engineering (BEng in Control Engineering); Technological Education Institute of Piraeus, Dept. of Automation.
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## Academic theses

- **PhD thesis:** “Flexible robotic control via co-operation between an operator and an AI based control system.” Developed a systematic multidisciplinary framework/paradigm for conducting experiments with human operators, using variable autonomy in robots. Designed and evaluated a novel Mixed-Initiative (MI) control system in which both the human operator and the mobile robot have the capacity of switching Level of Autonomy during task execution.
- **MSc thesis:** “Manipulation and transport of an object via caging with a swarm of robots.” Developed a framework for transport and caging, applied and tested in e-puck robots. Research conducted in Natural Robotics lab, University of Sheffield.
- **BEng. Thesis:** “Design of Modern Control Systems and their applications in Lego NXT.”. Applied as a Lego NXT “ball and plate” system using Matlab, a web camera and a Model Predictive Controller.

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## Academic activities

- **Teaching assistant in robot programming module, 2014-2017:** School of Computer Science, University of Birmingham. Responsibilities included teaching, marking and heavy involvement in curriculum design.
- **Students’ supervision, 2013-2017:** Supervised several students’ research projects and theses. These students included undergraduate and masters’ students from the University of Birmingham and intern students from various institutions across Europe.
- **Science outreach, 2009-2017:** Actively engaged in a plethora of science outreach events. These events include among others: I2fest; Athens Digital; university of Birmingham open days; BBC’s “Make it Digital” and others.
- **Robotics Master-classes for Royal Institution of Great Britain, 2015-2016:** I organized and delivered a plethora of talks and classes aiming at teaching and promoting robotics and science in primary and high schools across UK. The Royal Institution of Great Britain is the flagship organization for science outreach and education in UK.
- **Leading the Birmingham autonomous robotics club (BARC), 2014-2016:** A robotics club in which students have the opportunity to get hands-on experience on using state-of-the-art robots. This was done through student projects, workshops and mainly by participating in robotic competitions such as the EU commission funded RoCKIN@Home robotics challenge.
- **Robotics hack-day, 2015:** Organized and delivered a one-day workshop in the University of Birmingham, teaching students hands-on skills on using robots and the robot operating system (ROS).

- **Work experience workshops, 2015-2016:** Organized and delivered workshops aiming to give a taste of Computer Science to high school students. Hosted by the University of Birmingham.
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## Academic achievements

- **Finalist for best paper award, IROS 2016:** The paper “*Experimental analysis of a variable autonomy framework for controlling a remotely operating mobile robot.*” was shortlisted for the best paper award in IEEE/RSJ International Conference on Intelligent Robots and Systems.
  - **RoCKIn@Home, 2015:** Won two prizes with BARC in the robotics challenge RoCKIn@Home: a) best team in functionality benchmark “Object Perception”, b) third overall place in the competition.
  - **RoCKIn@Home, 2014:** Won several prizes with BARC in the robotics challenge RoCKIn@Home: a) best team in task benchmark “Getting to know my home”; b) best team in task benchmark “Welcoming Visitors”; c) second overall place in the competition.
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## Training

- **Postgraduate Enterprise Summer School, 2015:** An intensive weeklong school, providing training in a wide range of specialist areas aiming in carrier development and entrepreneurship. Hosted by the University of Birmingham.
  - **Learning and teaching in higher education courses, 2013, 2014:** A series of courses hosted by the University of Birmingham, intended to train postgraduate students for teaching.
  - **Event Related Potentials summer school, 2013:** Summer school regarding theory and practice of electroencephalography (EEG), focused on event related potentials (ERPs). Hosted by the University of Birmingham, School of Psychology.
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## **Publications**

- Chiou, M., Hawes, N., & Stolkin, R. (2017). *Mixed-Initiative variable autonomy in a remotely operated mobile robot*. Submitted for review in the International Journal of Robotic Research.
- Chiou, M., Bieksaite, G., Hawes, N., & Stolkin, R. (2016). *Human-Initiative Variable Autonomy: An Experimental Analysis of the Interactions Between a Human Operator and a Remotely Operated Mobile Robot which also Possesses Autonomous Capabilities*. In AAAI Fall Symposium Series: Shared Autonomy in Research and Practice (pp.304-310).
- Chiou, M., Bieksaite, G., Stolkin, R., Hawes, N., Shapiro, K. L., & Harrison, T. S. (2016). *Experimental analysis of a variable autonomy framework for controlling a remotely operating mobile robot*. In IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) (pp. 3581-3588).
- Chiou, M., Hawes, N., Stolkin, R., Shapiro, K.L., Kerlin, J.R., & Clouter, A. (2015). *Towards the Principled Study of Variable Autonomy in Mobile Robots*. In IEEE International Conference on Systems, Man, and Cybernetics (SMC) (pp. 1053-1059).

**References available on request**