Charalambos Rossides (Harry)

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*Passionate **control engineer** who likes working in teams and **sharing his knowledge** with colleagues. Having a broad scientific background, I tend to **combine ideas from different disciplines** to tackle practical problems. My interests are focused on **bio-imaging systems**.*

Keywords: Bio-imaging / X-ray computed tomography / Engineering / Academically inclined

Education

Jan. 17 - Jan. 20	**PhD in Bio-engineering** Bio-engineering group, Faculty of Engineering and Physical Sciences, *University of Southampton*, UK **Thesis project**: "A novel way to enhance the diagnosis of early stage of colorectal cancer through micro-computed tomographic imaging."
Aug. 14 - Aug. 16	**MSc in Systems and Control** Robotics and Mechatronics dpt., *University of Twente*, The Netherlands **Thesis project**: "Design and Implementation of a Modular, Customisable, Multi-Modality Compatible Actuator with Position Feedback."
Jun. 09 - Jul. 14	**MSc in Electrical and Computer Engineering** *National Technical University of Athens*, Greece Specialised in Automation and Control / Robotics **Thesis project**: "Mobile robot navigation through an unknown environment towards a predefined target." In cooperation with ***NCSR Demokritos.***

(Work) Experience

Jan. 17 - Present	**X-ray micro-computed tomographic (μCT) imaging** • Heavily involved in laboratory- and synchrotron- phase-contrast X-ray μCT imaging. I engaged with both the involved mathematical derivation and the algorithmic part, as well as physically joined seven synchrotron visits.
Jan. 17 - Present	**Grand proposal drafting** • Successfully drafted proposals and have been awarded beamtime thrice at world-leading synchrotron facilities (Diamond Light Source, Swiss Light Source), accomplishing access through competitive routes due to the limited number of facilities.
Jan. 17 - Present	**Leadership and management** • Extensive experience in designing and planning X-ray imaging experiments at synchrotron facilities, leading small groups of people during days of overnight use of scientific equipment. Detailed planning, ability to make decisions under pressure and fatigue, independent working and leadership skills are vital competences gained.
Sept. 18 - Present	**Supervision and executive skills** • Involved in the supervisory team of (three) undergraduate students performing their 3^{rd} year *individual project*, which was directly related to my PhD project. Interpersonal skills, ability to provide (scientific) guidance, working in an executive panel and communication skills were attained from these activities.
Jan. 18 - Present	**Demonstrator (*3D printing workshop*, University of Southampton)** • Assisting students to use the 3D printers in the prototyping workshop. Social and communication skills, ability to quickly propose solutions to simple problems and facilitate the work of others were gained from this activity.
Sept. 15 - Oct 15	**Teaching Assistant (*Bio-robotics course, University of Twente*)** • Assisted and supervised groups of students during workshop sessions of the module of Multi Body Dynamics and Control for the ***Bio-Robotics*** course.
Sept. 15 - Dec 15	**Intern at *DEMCON Advanced Mechatronics*** • Developed a physiological model of the human finger. I conducted biomedical signal analysis, modelling, system identification and mockup simulation aiding in the development of the *Nanocore* ***medical device***, produced by DEMCON for FINAPRES.
July 07 - July 09	**Cypriot National Guard** • **Director** of weapon storage and **personnel management** office assistant.

Publications and awards

Jun. 19 **Awarded beamtime at Diamond Light Source synchrotron facility**
- for proposal 22588: *"Dysplastic lesions as early-stage markers for colorectal cancer in mice and man."*

Jun. 19 **Awarded the 1^{st} best poster prize**
- for the poster titled: *"Soft tissue-optimised micro-computed tomographic imaging for the study of early stages of colorectal cancer."* at the 4^{th} *annual workshop on advances in X-ray imaging*, Diamond Light Source.

Feb. 19 **Awarded beamtime at Swiss Light Source synchrotron facility**
- for proposal 20182055: *"Sub-micron phase-contrast computed tomographic imaging of selected lesions on murine colons with early stage colorectal cancer."*

Jan. 18 **Awarded beamtime at Diamond Light Source synchrotron facility**
- for proposal 17241: *"Early-stage diagnosis of colorectal cancer using high-resolution computed tomography: development of biomarkers and imaging protocol."*

Feb. 16 **Rossides, C. and Konstantopoulos, S., 2016, May. Simultaneous Localisation and Mapping to Reach Linguistically-Defined Targets. *In proceedings of the* 9^{th} *Hellenic Conference on Artificial Intelligence* (p. 14). ACM.**

Outreach and misc

May. 19 ***Soapbox science fair***
- Volunteered to support the event supporting women in science.

Jul. 18 **University of Southampton open days**
- Joined the *μ-VIS imaging lab* crew to engage with prospective students and guide them through our scope of activities at the University of Southampton.

Jun. 18 ***The new forest show***
- Joined the *Wessex Immunology Group (WIG)* in their outreach activity where I engaged with kids using a model of the murine colon with colorectal cancer.

- Present **Conference presence**
- Attended and presented intermediate results of my PhD at (> 10) internal, national and international conferences. Here I learned how to customise my talk according to the nature of the conference, communicating my message to versatile audiences.

Relevant Modules

Multi-variable Control System Design, Optimisation Techniques and Control Applications, **Intelligent Robotic Systems**, Engineering System Dynamics, **Modelling and Simulation**, System Engineering, **Pattern Recognition**, Computer Vision, **Neural Networks and Intelligent Systems**, Advanced Computer Architecture, **Parallel Processing Systems**, Artificial Intelligence, **Machine Learning**.

Relevant Coursework

Master Thesis Project:
- Designed and prototyped a **Multi-Modality compatible** system (pneumatic actuator, valve and a fibre optic position sensor) for minimally invasive robotic image-guided interventions. Gained experience in **rapid prototyping** and **script based computer-aided design (CAD)**.

Diploma Thesis Project:
- Developed a **novel algorithm** to navigate a mobile robot through an unknown environment towards a target described in pseudo-human language. *Published at SETN'16.*

Systems Engineering:
- Worked within a **team of 10 people**, where we applied design reviews and incremental refinement techniques to design a robotic street cleaning system.

Modelling and Simulation:
- Modelled, designed and simulated a mobile robotic arm that balances a 3D pendulum. I used **Bond Graphs** to model and simulate the system's dynamics in 20Sim.

Skills

Languages: **Greek** (mother tongue), **English** (fluent), **German** (basic)
General: **Highly abstract thinking**, Quick with new prog. languages, **Deep theoretical knowledge**
Programming: C/C++, **Python**, openMP, MPI, cuda, **Matlab/Simulink**, **Wolfram Mathematica**, {8085, 8086, AVR, MIPS, ARM} Assembly
Design Tools: **FreeCAD**, IBM Rtl Rhapsody, **20Sim**, Mayavi
Other: GNU/Linux, **FiJi/ImageJ** jython scripting, **Amira/Avizo**, VGstudio Max

Last updated on August 8, 2020