Charalambos Rossides, PhD (Harry)

www.HarryRossides.info ✉ rossides.ac@gmail.com in /in/HarryRossides

Summary

- Passionate **control engineer** with experience in medical signal processing for commercial **medical devices.** *Applying science for good reason matters to me!*
- Having a broad scientific and engineering background, I combine ideas from **diverse disciplines** to design and implement **innovative algorithms** and methods.
- Effective communicator of complex ideas to interdisciplinary audiences. **Team-player**, experienced in detailed planning and **leading** small groups of people during long days of experimental procedures.

Keywords: Advanced signal processing / Optimisation / Intelligent control / Research & Development

Work Experience

May 21 - Now	**System architect (*Radii Devices*, Bristol, UK - remote)** Designing the Radii devices system for prosthetics and orthotics from the ground up. Implementing quality assurance, via testing and benchmarking frameworks, while employing modern software design approaches for continuous integration & development (CI/CD).
Jan. 21 - May 21	**Algorithm engineer (*Radii Devices*, Bristol, UK - remote)** Developed mesh morphing algorithms in C++ for prosthetic and orthotic devices.
Mar. 20 - Now	**Sr. research assistant (*μVIS X-ray imaging centre*, University of Southampton)** Developing advanced signal-processing and sensor fusion methods, including super-resolution imaging and X-ray metrology, for laboratory-based computed-tomography.
Sep. 19 - Mar. 20	**Research assistant (*μVIS X-ray imaging centre*, University of Southampton)** Developed advanced X-ray imaging methods, including tilted-angle laminography and scatter reduction, for non-destructive examination of jet-engine parts for Rolls-Royce.
Jan. 18 - Sep. 20	**Demonstrator (*3D printing workshop*, University of Southampton)**
Sep. 15 - Oct. 15	**Teaching Assistant (*Bio-robotics course*, University of Twente)**
Sep. 15 - Dec. 15	**Intern (*DEMCON Advanced Mechatronics*, Enschede)**
Jul. 07 - Jul. 09	**Private soldier (*Cypriot National Guard*, Cyprus)**

Education

Jan. 17 - Jul. 21	**PhD in engineering and the Environment** Bio-engineering group, Faculty of Engineering and Physical Sciences, *University of Southampton*, UK **Thesis**: "Development of 3D X-ray phase-contrast imaging and analysis tools for tubular and branching structures with applications in colorectal cancer research." Supervisors: Philipp Schneider, Sylvia Pender
Aug. 14 - Aug. 16	**MSc in Systems and Control** Robotics and Mechatronics dpt., *University of Twente*, The Netherlands **Thesis**: "Design and implementation of a modular, customisable, multi-modality compatible actuator with position feedback."
Jun. 09 - Jul. 14	**MEng in Electrical and Computer Engineering** *National Technical University of Athens*, Greece **Thesis**: "Mobile robot navigation through an unknown environment towards a predefined target." Joint affiliation with ***NCSR Demokritos.***

Background

Multi-variable control system design, Optimisation techniques and control applications, Engineering system dynamics, **Pattern recognition**, Computer Vision, **Neural networks and intelligent Systems**, Advanced computer architecture, **Parallel processing systems**, Artificial intelligence, **Machine learning**, Embedded systems design, **Linear circuit design**, Advanced electronic design, **Logic & VLSI design**.

Last updated on August 4, 2021

Key competencies

Working in a healthcare university spin-out company

I learned how to be adaptive in an ever-changing environment, and switching between roles within a team, while practicing effective time-management to meet a strict time-plan. Embracing a leading role as the company's system architect, I proposed and introduced a range of workflows/procedures, development tools (Google Bazel build framework, Google Test, Google benchmark, Doxygen) and best practices (unified nomenclature, improved communication, cleaner & more consistent design structure) to ensure a high quality of engineering and design.

Medical wearable device design

I modelled, implemented, and deployed in an embedded micro-processor a physiological model of the human finger. My model, which was used to test and further develop a commercial medical device (*FINAPRES Nanocore*) for noninvasive blood pressure monitoring, **enabled DEMCON to certify the device** through *in-silico* experiments, **reducing the time-to-market by several months**.

Strong mathematical and computing skills

My background covers the entire range from electronic design, computer architecture, algorithm design and implementation. Thus, I have a clear picture of the challenges of both high & low level implementation of complex ideas, involving mathematical derivation, software development and hardware implementation.

Grand proposal drafting / awards

Detailed planning and forward thinking demonstrated by three successful proposals for beamtime at world-leading synchrotron facilities (Diamond Light Source, Swiss Light Source), accomplishing access through competitive routes, with a total financial worth estimated upwards 90K GBP.

Supervision and executive skills

Interpersonal and communication skills, ability to provide (scientific) guidance, and experience of working in an executive panel, were gained while being involved in the supervisory team of undergraduate students.

Leadership and management

Strong leadership and teamwork skills, managing small groups of researchers during days of overnight use of synchrotron equipment. With meticulous planning, ability to make decisions under pressure and fatigue, and effective problem-solving on the spot, we managed to make the most out of the available resources and successfully perform our experiments.

Written & verbal skills

Excellent communicator, with more than ten oral presentations in local, national and international conferences, three scientific papers, two 1^{st} place awards (best scientific poster & best computed-tomography image) and three awarded synchrotron beamtime proposals. Having an interdisciplinary audience for my PhD work, I learned how to effectively communicate with biologists, engineers and physicists to bridge the gap between the different disciplines and convey my key message.

Skills

Languages:	**Greek** (mother tongue), **English** (fluent), **German** (basic)
General:	**Highly abstract thinking**, Quick with new prog. languages, **Deep theoretical background**, Good communicator, **Responsible**, Empathetic & Supportive
Programming:	**C/C++**, Python, **openMP**, MPI, **cuda**, {8085, 8086, AVR, MIPS, ARM} Assembly
Development Tools:	**Google Bazel**, Google Test, **Google benchmark**, Bash, **Git**, CI/CD scripting
Design Tools:	**FreeCAD**, 20Sim, **IBM Rtl Rhapsody**, Mayavi, **Matlab/Simulink**
Misc.:	GNU/Linux, **Fiji/ImageJ** jython scripting, **Amira/Avizo**, VGstudio Max

This resume provides a snapshot of my profile at a fixed point in time. For a rounder picture and an up-to-date impression, please visit my personal website.

Last updated on August 4, 2021