

CHARALAMBOS ROSSIDES, PhD (HARRY)

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SUMMARY

- Passionate **control engineer** with experience in medical signal processing for commercial **medical devices**. *Applying science for good reason matters to me!*
- Employing 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.

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

WORK EXPERIENCE

Radii Devices, Bristol, UK - remote

- **System architect** (MAY 21 - NOW):
Designing the Radii devices system for prosthetics and orthotics from the ground up. Implementing quality assurance through modern software design approaches for continuous integration & development (CI/CD), testing and benchmarking. Introduced workflows, tools (Google Bazel, gTest, gBenchmark, Doxygen) and best practices (unified nomenclature, improved communication, consistent structure) to ensure a high performance, safety by design, and robustness.
- **Algorithm engineer** (JAN. 21 - MAY 21):
Developed mesh morphing algorithms in C++, involving concepts of 3D computational geometry.

μVIS X-ray imaging centre, University of Southampton, Southampton, UK

- **Senior research assistant** (MAR. 20 - DEC. 21):
Developed advanced signal-processing and sensor fusion methods, including super-resolution imaging and X-ray metrology, for laboratory-based computed-tomography.
- **Research assistant** (SEP. 19 - MAR. 20):
Developed advanced X-ray imaging methods, including tilted-angle laminography and scatter reduction, for non-destructive examination of jet-engine parts for **Rolls-Royce**.

DEMCON Advanced Mechatronics, Enschede, The Netherlands

- **Intern** (SEP. 15 - DEC. 15):
Modelled, implemented, and deployed in an embedded micro-processor a physiological model of the human finger. This **enabled DEMCON to certify a commercial medical device (FINAPRES Nanocore)** through *in-silico* experiments, **reducing the time-to-market by several months**.

EDUCATION

PhD in Engineering and the Environment (JAN. 17 - JUL. 21)

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

MSc in Systems and Control (AUG. 14 - AUG. 16)

Robotics and Mechatronics dpt., *University of Twente*, The Netherlands
Thesis: “Design and implementation of a modular, customisable, multi-modality compatible actuator with position feedback.”

Integrated MSc in Electrical and Computer Engineering (JUN. 09 - JUL. 14)

School of 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**, Digital signal processing, **Microprocessor systems**, Speech and natural language processing.

KEY COMPETENCIES

Strong mathematical and computing skills

My background includes electronic design, computer architecture, and algorithm design. I understand the challenges of 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 accomplishing access (thrice) through competitive routes to world-leading facilities (Diamond Light Source, Swiss Light Source). 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, gained by supervising undergraduate students.

Leadership and management

Leadership and teamwork skills, managing small groups of researchers during days of overnight experiments. Meticulous planning, ability to make decisions under pressure and fatigue, and effective problem-solving on the spot were key to success.

Written & verbal skills

Excellent communicator, with more than ten oral presentations in local, national and international conferences, and two 1st place awards (best scientific poster & best computed-tomography image). 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:	Abstract thinking, Empathetic & Supportive, Theoretical background
PROGRAMMING:	C/C++, PYTHON, openMP, MPI, CUDA
DATA SCIENCE:	NUMPY/SCIPY, PANDAS/SEABORN, WOLFRAM MATHEMATICA
DEVELOPMENT TOOLS:	GOOGLE BAZEL/TEST/BENCHMARK, GIT, CI/CD scripting, GNU/LINUX/BASH
DESIGN & MISC. TOOLS:	FIJI/IMAGEJ, FREECAD, 20SIM, Matlab/Simulink

This resume provides a snapshot of my profile at a fixed point in time (December 26, 2021). For a rounder picture, please visit my personal website www.HarryRossides.info.