Erwan Régy

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Summary

Third-year MEng Electronic Engineering student at the University of Southampton. Experienced in C/C++, Python, and SystemVerilog, with particular interests in digital design, machine learning, and communications. Additionally seeking to explore more of VLSI, computer architecture, and FPGAs.

Experience

Intern Software & Hardware Verification Engineer *June – September 2022*

***Picocom**, Bristol*

Worked on various projects, enhancing skills in GNU/Linux, Git version control, embedded C, and Python scripting:

- Fixed software for a chip's temperature sensors to work down to negative forty degrees Celsius.
- Built a testing framework to test instructions and commands in release documentation using Robot Framework. This is now integrated into the team's continuous regression testing.
- Verified functionality of cache prefetch on an RTL CPU model using cocotb and embedded C.
- Debugged a Dhrystone benchmark implemented in embedded C and helped to get test patterns working on RTL models with tech swaps (from generic to TSMC models).

Shadow Civil Engineer *August 2018*

***Atkins**, Epsom*

- Researched nuclear power plant designs using information from reliable online resources and experienced employees.
- Formulated presentations to compare the efficacy of various power plants and provided information on each's highlights and drawbacks.
- Presented these topics before large groups of employees, receiving encouraging and helpful feedback on my presentational skills.

Shadow Web Developer *August 2017*

***Findoc,** London*

- Worked on updating the company's website, focusing on visual design and user experience.
- Analysed and compared close competitors' websites; organised and presented proposals for improvements that were subsequently taken on.
- Carried door-to-door recruitment, encouraging doctors to sign up for Findoc's service.

Education

Master of Engineering *October 2020 – Present*

Electronic Engineering

University of Southampton

1st (current average)

- Designed and laid out a digital integrated circuit for a 24-hour clock. Learnt the S-Edit (schematic) and L-Edit (layout) programs and practised applying test vectors to verify functionality.
- Led a group of six to build a high-fidelity portable Bluetooth speaker. Designed a custom class A amplifier and produced and directed a well-received advertising campaign.
- Built a five-stage pipelined MIPS CPU simulator in C++, with a semi-custom ISA, hazard detection and forwarding, and dynamic branch prediction. Wrote a MIPS assembly to machine code compiler to work concurrently alongside this.
- Worked in a team of three to build a full custom-specification networking stack to run on AVR microcontrollers. Designed and developed the data link layer in embedded C++ (including the logical link and media-access control sub-layers); employed effective teamwork to integrate the interfaces between each layer.
- Currently pursuing an individual project, building a convolutional neural network accelerator architecture on an FPGA.

A Level *September 2018 – July 2020*

Mathematics, Physics, Chemistry

Trinity School of John Whitgift

AAA

Skills & Interests

- Self-taught C, C++, and Python, through many personal projects such as an NES emulator and a neural network from scratch. Currently self-teaching Rust.
- Completed the Duke of Edinburgh Gold award, exercising adept communication and teamwork.
- Passionate photographer. Solid observational skills and always open to new influences.
- Knowledgeable in French, growing up in a semi-French-speaking household.
- Seventeen years of music experience, playing the piano and cello up to grade eight:
  - Learned to collaborate effectively through many group rehearsals.
  - Practised pattern-recognition skills from memorising music.
- Enthusiastic about technology and art:
  - tinkering with hardware (building and upgrading computers) and software (coding projects)
  - discovering and creating music.