Ben Lancaster

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PERSONAL PROFILE

I am passionate about Embedded Systems, Hardware/Software, and FPGAs with great experience from an RF Firmware Engineering Placement. I am interested in System-on-Chip architectures and hardware/software interfaces and I am active in the open-source community with contributions to Gravity-lang (compiler) and more. I am always looking for an interesting project to dive into.

Key strengths:

- Self-motivated
- Problem-solving
- FPGA/SoC Placement experience
- C & C++
- Embedded Systems
- Linux kernel + driver development

EMPLOYMENT

Firmware Engineer, Placement **Spirent Communications** **June 2016 – August 2017**

- Embedded programming on Xilinx MicroBlaze FPGAs and PIC16/24 microcontrollers.
- Linux USB and PCIe kernel driver development.
- Implemented on-chip power levelling and calibration for GNSS RF signal generators.
- Controlling on-board fans, LEDs, EEPROM, and other peripherals with I2C and SMBus.
- Configuring, building, and maintaining Embedded Linux distributions using Yocto.

EDUCATION

MSc (Eng) Embedded Systems Engineering **University of Leeds** **2018 – 2019**

- **Final Project:** Multi-core SoC Design and Implementation for FPGAs.
- Courses include: Digital Signal Processing for Communications, FPGA Design for System-on-Chip, Embedded Microprocessor System Design, Medical Electronics and E-Health, Secure Hardware Design

BSc (Hons) Computer Science **University of Plymouth** **2014 – 2018**

- **First Class Honours** with Certificate of Professional Industrial Experience.
- **Final Project:** FPGA-based 16-bit RISC soft-microprocessor (with IO & interrupts) and Compiler.
- **Awards**: Top Final Year Student, Best Final Project, Revell Research Systems Prize.
- Courses include: Digital Electronics, Embedded Systems and Compilers, Machine Vision, Computation Theory.

OPEN-SOURCE PROJECTS & CONTRIBUTIONS

- **16-bit RISC soft-microprocessor** bendl/prco304 An FPGA-based RISC soft-microprocessor written in Verilog, complete with Compiler and programming languange.
- **ARM Cortex M0 Processor Board** bendl/armm0 A 2-layer board for the Minispartan6+ FPGA development kit. Features an STM32F0 TSSOP processor, dual power supplies, I2C, ICSP, and LEDs.
- **Gravity-lang** marcobambini/gravity Contributor to an open-source compiler and virtual-machine. Contributions include fixing Windows runtime.

ADDITONAL EXPERIENCE AND AWARDS

- Dean's List 2015-2018 member. List of students who achieved academic excellence in their studies.

TECHNOLOGIES

- C, C++, Python, Linux (user + kernel), Bash
- Xilinx FPGAs, ISE, Vivado, Impact, Visual Studio, CMake, CUDA
- GitHub, GitLab, SVN

REFERENCES

Available on request.