# Ben Lancaster

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## PERSONAL PROFILE

I am passionate about Embedded Firmware/Software and FPGAs with great experience from an RF Firmware Engineering placement. I am interested in Linux kernel and driver development. I am active in the open-source community with contributions to Gravity-lang (compiler). I am always looking for an interesting project to dive into.

**Key strengths:**

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

## EMPLOYMENT

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

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

## EDUCATION SUMMARY

**BSc Computer Science (4 years)** **Plymouth University** **Fall 2014 – Summer 2018**

- **(Current)** BSc in Computer Science, Exp. May 2018. Expecting first class honours.
  Final Project: FPGA-based 16-bit RISC soft-microprocessor (with IO & interrupts) and Compiler.

## NOTABLE PROJECTS

- **VCore – 16-bit RISC soft-microprocessor.** An FPGA based RISC soft-microprocessor written in Verilog.
- **libCCL – Self-hosted compiler and standard library.** A C-like programming language and optimising compiler supporting, 8086, x86. Includes self-written standard library. C/C++, LLVM, Assembly.
- **Gravity-lang** – Contributor to an open-source compiler and virtual-machine. Contributions include fixing Windows runtime.
- **NRBF Neural Network –** A dynamic NRBF neural network written in Python to predict UK energy usage.

## ADDITONAL EXPERIENCE AND AWARDS

- Dean’s List 2016 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.