

## Fu Yong Quah

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Final year Electronic and Information Engineering undergraduate at Imperial College London, United Kingdom.

### Education

2014 - 2018

#### **Imperial College London, London, UK**

MEng. Electronic and Information Engineering

First class, Dean's List

*Computer Architecture, Control Engineering, Computer Vision, Simulation and Modelling, Operational Research, Mathematics, Language Processors, Computational Optimization*

2013 - 2014

#### **INTI International College Penang, Penang, Malaysia**

Cambridge GCE A-Levels: 4A\* in Mathematics, Further Mathematics, Physics and Chemistry.

### Professional Experience

04/2017 - 09/2017

#### **Jane Street Capital - Software Developer Intern**

- Worked on projects from the ocaml compiler to trading systems.
- One of my project improves the performance of Flambda, the ocaml compiler's inliner.

07/2016 - 09/2016

#### **Google Inc - Software Engineering Intern**

- Deploy python static analysis tool ([github.com/google/pytype](https://github.com/google/pytype)) to code review tool.
- My work was used to run program analysis Borg, pytype and an internal tool.
- Worked with pytype and bazel, in python and java

06/2015 - 08/2015

#### **Netcraft Ltd - Internet Service Developer Intern**

- Worked primarily on a classification project of hosting companies
- Automated data collection and validation using Perl, Bash scripts and Cronjobs.
- Improve and maintain a web interface for manual data labelling (Perl/CGI/MySQL)

### Skills

#### **Programming**

Familiar with functional programming, OOP and distributed asynchronous programs. Experienced with OCaml, C++, Clojure, Python, Clojure, Java.

#### **Static Analysis**

Familiar with hindley milner type systems in FP and compilation pipelines. Worked on inlining in ocaml, type-inference in python; Wrote a C compiler from scratch.

#### **Statistical**

Familiar with Bayesian inference, statistical testing, reinforcement learning. Experienced with pytorch, tensorflow, matplotlib and numpy.

#### **FPGA Design**

Familiar with design optimization using resource (I/O, LUT, memory, clock, compilation time) and performance modelling, Worked with GALS based FPGA designs. Experienced with systemVerilog, Maxcompiler, Vivado HLS, Quartus.

### Projects

01/2017 - 03/2017 **fpgaConvNet on Maxeler**

- Map convolutional neural networks to FPGA using maxcompiler.
- Optimized design to maximize image-processing throughput with respect to logic units, BRAM and DSP constraints using statistical models.

01/2016 - 03/2016 **Self-Hosting C Compiler**

- Implement a turing complete portion of a C to MIPS compiler
- Written in C, flex and bison, extensively using classic C dynamic-dispatch techniques

05/2015 - 06/2015 **Real-time Autofocus for FPGA** [ link: <https://youtu.be/UJXkHhFQPak> ]

- Developed an algorithm to carry out autofocus with FPGA via edge detection.
- Written in C++ using High Level Synthesis with Verilog HDL.

### Awards

2016 **PennApps** - Grand Prize (<http://technical.ly/philly/2016/01/25/scary-hardware-hack-won-pennapps-ramear/>)

2015 **Fishackathon** - Grand Prize, sponsored to attend World Mobile Congress 2016

2014 **International Olympiad in Informatics (IOI)** - Represented Malaysia to the competition