Leyang (Ben) Shen

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Education

2017 - 2021 **MEng, EIE (Computer Science and Digital Engineering)** — **Imperial College London**
- 72% overall, equivalent to First
- Implemented Raft Consensus using Functional Language Elixir
- Understand Distributed System, Database Processing Models, and Network Security

2015 - 2017 **A-level** — **Abbey College Cambridge**
- Further Mathematics (A*), Mathematics(A*), Physics(A), Chemistry(A)

Skills

Languages Python, Bash, C++, JavaScript, PHP, SQL, Elixir, Golang
Tools Git, Travis, Docker-Compose, Vim, Jira, Gerrit, Confluence
Platforms Ubuntu, Alpine, Raspberry PI, MBED, ESP32, FPGA

Experience

Apr 2020 - Sep 2020 **Industrial Placement** (Python, Bash, System Verilog) — **Central Engineering, Arm**
- Received via six-month placement return offer

Jul 2019 - Sep 2019 **Design and Verification Intern** (Python, C++, Bash) — **Central Engineering, Arm**
- Contributed to next generation Generic Interrupt Controller, used by large server farm
- Implementing internal python script as part of regression testing infrastructure
- Wrote customer facing configuration generation script with detailed Wiki page
- Designed a testing framework and caught one bug before product been shipped

Aug 2018 **Course Organiser, Summer School** — **Huzhou No. 5 Middle School**
- Proposed a 7-day robotics program and tried 2 assistants to better deliver the course.
- Spent 2 months planning and validating the programme with aid of CAD and laser cutter.
- Use combination of lecture and labs, enabling pupils reflect from their previous design.
- The proposed programme was added to school's "STEAM" syllabus

Projects

Jan 2020 - Feb 2020 **Raft Consensus** (Elixir, Functional Programming, Leader Selection) — **GitHub**
- Implemented Raft Algorithm to achieve leader selection and consensus
- Used Elixir as its functional nature is more sustainable to bugs
- Designed a testbench that can emulate non-byzantine failure.

Oct 2019- Nov 2019 **Probabilistic Localisation in Known Map** (Monte-Carlo Method, Python, LEGO) — **GitHub**
- Managed team of five, used code review to maintain a clean code base
- Build a particle filter to allow localisation, enable automatic route planning

Jan 2019 – Jun 2019 **C90 Compiler** (C++, AST, Polymorphism, Testbench) — **GitHub**
- ABI complaint compiler written in C++ with the aid of *flex* and *bison*.
- MIPS register and stack emulation to auto compute stack pointer movement.

Personal projects

Aug 2019 – Present **Smart Home** (Docker-Compose, Python, Alpine Linux, Samba) — **GitHub**
- Hosted service such as Network Drive, MQTT Broker, ZigBee Bridge, Home Assistant in Docker Daemon on Raspberry PI. Managing Infrastructure as Code.
- Connected to a range of low embedded device from Heating to Lighting and E-ink Display
- Use Python framework to run custom event-driven routines on Docker Daemon