

Joon-Ho Son
MEng Computing at *Imperial College London*

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EDUCATION

- Imperial College London* Sep 2017 - Jul 2021
- MEng (Hons) Computing
 - Third year: 82%; second year: 80%; first year: 72%
- Hills Road Sixth Form College* Sep 2015 - Jun 2017
- A-Levels: Maths (A*) Chemistry (A*) Further Maths (A) Physics (A) EPQ (A*)

EXPERIENCE

- Google, Software Engineering Intern* May 2020 - Oct 2020
- Designed and implemented a persistent caching framework for *Google Health's* healthcare tools with **Dart** and **Flutter**, facilitating offline use and improving critical user journeys.
 - Added support for HL7 FHIR in Simulated Hospital with **Go**, delivering the project four weeks ahead of schedule.
- Google, STEP Engineering Intern* Jul 2019 - Sep 2019
- Designed and implemented a resource optimisation tool for a distributed data synchronisation service using **Go** and **protocol buffers**.
 - 52% projected RAM utilisation savings in production pipelines by applying computed optimal resource footprints.
 - Increased productivity of thousands of engineers by integrating with an internal incident response management tool to reduce toil involved with diagnosing underprovisioned pipelines.

PROJECTS

- Automated Image Analysis for Gene Therapy* sonj.me/cells Oct 2019 - Jul 2020
- Worked in collaboration with *Cambridge University Neuroscience* to automate analysis of neurological tissue to identify the effectiveness of gene therapy treatments.
 - Developed a cell segmentation algorithm in **Kotlin** that performs 10% more accurately compared to previous methods.
 - Lead a team of six to apply agile methods and delegate prioritised tasks to sub-teams.
 - Publication accepted to the *Journal of Open Research Software*; pre-print available at [arXiv:2008.06276](https://arxiv.org/abs/2008.06276).
- Mobilise* sonj.me/mobilise May 2019 - Sep 2019
- Developed a volunteer coordination web application for *City Harvest London*, a charity aiming to end food waste.
 - Awarded the *IBM 2nd Year Group Project Prize* and backed for further development by *Charity Insights*.
 - Used full-stack **JavaScript** to build a user-friendly web frontend (**React**) and powerful backend (**Node**, **PostgreSQL**) hosted on **AWS**.
- WACC Compiler* Jan 2019 - Mar 2019
- Worked in a small team to engineer a compiler for the WACC language in **Kotlin** from scratch.
 - Implementation included advanced class functionality, control flow analysis, and automatic reference counting.
- Pintos Operating System* Oct 2018 - Dec 2018
- Team lead in a group project to extend an operating system framework to support advanced features.
 - Responsible for implementing effective priority scheduling, user programs, and virtual memory in **C**.
- Poisonous Mushroom Classification* sonj.me/mushrooms Aug 2018 - Sep 2018
- Performed an in-depth exploratory data analysis on the feature set of over 8000 poisonous and edible mushrooms.
 - Trained a classifier in **Python** to predict the edibility of a mushroom based on a selected subset of these features.
 - Approach emphasised effective choice of metrics and hyperparameters in order to tackle class imbalance.

ACHIEVEMENTS

- Palantir Data Ethics Case Competition (1st Place)* sonj.me/data-ethics
- Coordinated a multi-disciplinary team in order to present a proposal detailing the technical and ethical challenges surrounding large-scale data collection at the *Amsterdam Privacy Conference 2018*.

SKILLS & INTERESTS

- Languages:** Proficient with Go, Python, Kotlin; familiar with Java, C, JavaScript; previously used Haskell, C++, TypeScript, SQL.
- Technologies:** Experienced with Git; familiar with Linux/Unix, LaTeX, CI/CD (Travis, Circle, GitLab); exposed to Docker, AWS, Perforce.
- Extracurricular:** *Imperial College Taekwondo* Vice-president '19/20, Secretary '18/19.