

Ben Butterworth

ben@orth.uk

London, UK [[Stack Overflow](#), [LinkedIn](#), [Website](#)]

Outside of my job, I write Stack Overflow answers/questions ([top 0.2%](#)), give [talks/workshops](#), maintain a website (10K visitors/month) and contribute to open source. I received dean's list & distinction for my degrees in computer science & engineering. I simplify and solve complex problems.

WORK EXPERIENCE

Software Engineer at Helsing.ai (Python, Rust) - Remote January 2022-now

- Authoring an internal RFC about API design using Protobufs improving design and architecture
- Fix internal deployment of Rust packages (crates), so rust applications can use them
- Configuring docker for projects to allow developers to develop consistently on any IDE and OS
- Configuring CI/CD in Gitlab to automate embedded application builds, testing and deployment
- Writing CI/CD templates to simplify writing CI/CD jobs in other projects/teams
- Developing, documenting, unit testing and integration testing applications running on drones

SDK Developer at Ably.com (Flutter / iOS / Android) - Remote April 2021-January 2022

- Oversee development by contractors working on other SDKs (iOS and Android)
- Added push notification and encryption support to [package](#), abstracting iOS and Android APIs into ergonomic Flutter API. Spawning Flutter Engines for background processing.
- Added Swift Package Manager support to 1 Objective-C and 1 Swift library, while using advanced module structure to ensure proper API access control for SDK users.
- Found bugs in internal and open-source code, providing actionable bug reports & fixes
- Built an anonymous video calling app (<https://club2d.orth.uk>) which generates a 3D face mesh, rendering it other user's browsers in real time. Gave [talk](#) at JSMonthly.
- Released open-source libraries: creating changelogs, writing documentation, handling issues and keeping enterprise customers such as banks feeling supported and happy.
- [Fixing and enhancing documentation](#) on the Ably documentation site covering all SDKs
- [Contributed Flutter Engine PR](#) to enhance Flutter plugin development on iOS.

Mobile ML Engineer at Popsa.com (**Android, iOS, TensorFlow**) - Remote Sep 2020 - April 2021

- Designed and built on-device photo library face recognition feature, including parallel image processing and IO, profiling and optimising memory and throughput across devices
- Built photo albums title suggestions using EXIF data, using Protocol-buffer based APIs.
- Wrote NumPy files parser in Kotlin to investigate cross platform image processing inconsistencies and subsequently discovering a bug in Android graphics library.
- Optimized models in Python with additional layers and pre-processing to improve performance
- Built internal tools for data scientists, including Python applications and macOS CLI tool to run models, including distribution for macOS (notarization) and progress animations.

Mobile Engineer, University software project (**React Native**)

Dec 2019 - May 2020

- Published mobile app to help 'calculate carbon impact of food' on Apple Store and Play Store.
- Wrote helpful documentation and automated processes with scripts and CI/CD tools.
- Built landing page in React and GatsbyJS in 4 hours: <https://foodprint.orth.uk>.
- Helped developers learn and be productive by teaching and guiding them, opting for Javascript and React Hooks for simplicity (Used Redux, Typescript in personal projects).
- Built navigation, GraphQL network requests, authentication with good test coverage, and mentored other developers with NodeJS, Apollo Server and authentication.

Software Engineer (Mobile Team) at Ocado Technology (**Java**)

Feb - Sep 2019

- Designed mobile-friendly APIs for mobile application offering sold to other supermarkets
- Reduced response time for requests by 3x, 1.24s to 0.39s by merging related APIs.

EDUCATION

Imperial College, Master's in Computer Science, **Distinction (highest)**

Oct 2019 - Aug 2020

- C++, OOP, Computer vision, ML, Information Security, Networking and Distributed Systems.
- Thesis: comparing/ implementing real-time ML systems for the edge and in cloud.
- Built receipt scanning and reimbursement app with React Native as part of a team who focused on the backend implementation, then invited to present app and meet employees at Fintech start-up with ~£150m investment.

Imperial College, Master's in Engineering, **1st class (highest), Dean's list**

2014 - 2018

- Developed automated painting machine, one component of an automated mini factory, using Autodesk SketchBook, Arduino, Solidworks, 3d printing, CNC machining
- Thesis: simulating and analysing nanoparticle behaviour in human cells using Python, Bash and molecular dynamics (GROMACS); and highest marks in simulation/ modelling.
- Business School courses: Project Management (A*) and Strategic Management (A*).

Massachusetts Institute of Technology, exchange student

2017

- Courses: Intro to Algorithms, Entrepreneurship in Engineering, Intro to Machine Learning.
- Research assistant: Analysed molecular simulation data for publications using Python.

VOLUNTEERING, HOBBIES & AWARDS

- Special constable (police officer) in training at London Metropolitan Police Service
- Developed open-source push notifications Flutter package and presented at GDGDevFest
- Self-taught ML engineering and TensorFlow, achieving the TensorFlow Developer Certificate.
- Organising and running events for 800 students in Halls, given Imperial Volunteer award.
- Managing DNS records and app releases for customers, organisations and personal projects.
- Author of technical articles & guides on <https://orth.uk>, averaging 10K unique visitors a month, with one article gaining 33K unique visitors in 3 days and top of Hacker News.