

Benjamin Cummings

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Penultimate-year Mathematics and Computer Science student with wide-ranging software engineering experience, committed to delivering high-impact solutions to complex technical problems.

Relevant Experience

Google | Software Engineer Intern – Wear OS Team

06/2025 - 09/2025

- Designed a multiplatform compiler in Kotlin for XML watch face files, running on Node.js and the JVM, that validates watch faces across all syntax versions and returns detailed error messages.
- Integrated watch face validator into the Google Play Store and Samsung Watch Face Studio, enabling automated design compliance checks before device-side rendering.
- Selected to present a top-placing Google hackathon project, an AI-powered watch app that generates a watch face APK to match a user's outfit, to a company-wide audience.

Inrupt inc. | Software Engineer Intern

09/2022 - 05/2023

- Developed and maintained the first Solid Java SDK, providing APIs for interacting with Solid Containers.
 - Designed an HTTP header parsing framework using ANTLR grammars.
 - Built and deployed full-stack demo app with Spring Boot to showcase the SDK's features and capabilities.
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Education

Imperial College London | BEng Mathematics and Computer Science

09/2023 - 06/2026

- First-Class Honours (predicted) - 1:1 in first and second year.
- Awarded the C Group Project Prize, Third Place for the Amadeus Prize ('Designing for Real People').
- Awarded 'Ash' Scholarship, part-time student at The Royal College of Music.
- Treasurer and Principal Cellist for Imperial College Symphony Orchestra.

Balerno Community High School

08/2016 - 06/2022

- A*A*A*A*A* in SQA Advanced Higher Exams and Seven A* grades for SQA Higher Exams with highest mark in Computer Science, Music and English.
 - Awarded School Dux Award (Valedictorian). TMUA: 7.0, STEP 2, and STEP 3 qualifications.
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Relevant Projects

- **WACC Compiler | Scala:** Designed and implemented an end-to-end compiler for WACC, a simple teaching language. Used parser combinators to build a typed AST and generate optimized, memory-safe x86 assembly.
 - **PintOS Operating System | C:** Implemented key operating system features including thread scheduling, synchronization, system call handling, and resource management, enabling safe and efficient execution of user programs in a low-level virtual operating system.
 - **Shop Sherpa | TypeScript, React, Next.js:** Led development of a mobile web app guiding UK immigrants through grocery shopping. Uses barcode scanning to show real-time data on price, nutrition, sustainability, and brand reputation; includes a real-time community page and personalized product recommendations.
 - **ARM Emulator and Assembler | C:** Designed and implemented an emulator for FDE cycle on the ARMv8 architecture, together with an Assembler to parse ARM Assembly into machine code for code execution on a Raspberry Pi.
 - **Chess Game with AI Opponent | Java, Swing:** Designed an interactive chess game with a customizable Swing GUI, game-saving with MariaDB and a minimax-powered AI opponent.
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Skills & Interests

Computer Programming:

- Oracle Certified Java 17 Professional, Full-Stack engineer and Android developer.
- Proficient in: Kotlin, C, Haskell, JavaScript, TypeScript, Scala and Python.
- Experienced with: Spring Boot, Next.js, React, Vue.js, Firebase, MariaDB, Junit, Jest, Git, GitHub CI/CD, Gradle, Maven, ARM/x86 assembly, Compiler Design, Functional Programming, Chrome Extension dev.

Music:

- Freelance professional cellist and part-time student at the Royal College of Music.
- Achieved 98% in ABRSM Diploma. Appointed Principal Cellist of the National Youth Orchestra of Scotland and Junior RCS Symphony. Featured on BBC Radio Scotland, BBC One and in the BBC Proms.