

Ryan Su

Mathematician & Software Engineer

BENG CANDIDATE | IMPERIAL COLLEGE LONDON



VIEW ONLINE

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"BEng Joint Maths & Computing student at Imperial College London. Focused on algorithms, data modelling, and building scalable software solutions."

📖 EDUCATION

Imperial College London

2025 – 2028

BEng. Mathematics and Computer Science

- > **Computing:** Kotlin, Java, C, x86-64 Assembly, Discrete Mathematics
- > **Mathematics:** Real Analysis, Linear Algebra, Groups & Rings, Calculus & Applications

🏆 **Computing Entrance Scholarship (2025–2026)**

No.2 High School of East China Normal University, Shanghai

2022 – 2025

- > **Standardized Tests:** A Level Further Mathematics (A*) | AP Calculus BC/CS
A/Economics/Statistics/Physics 1,2,C (All 5s)
- > **Competitions & Others:** AMC (Top 1%) | TMUA (9/9)

</> PROJECTS

📦 CoolLib — Containerized Distributed Backend

- > Architected a **Kotlin/Spring Boot** REST API with **Clean Architecture**, serving as a unified data hub for Native Android & iOS clients.
- > Orchestrated a **Dockerized** stack with **Nginx** reverse proxy and **PostgreSQL**, ensuring environment parity and ACID-compliant concurrency.
- > Implemented **Zero-Trust security** via **Cloudflare Tunnels & JWT**, securing cross-platform sessions without exposing public inbound ports.

🤖 CoolLib — Reactive Android Client

- > Engineered a **Jetpack Compose** interface with seamless **Spring Boot integration** via Retrofit.
- > Implemented **Offline-first sync** using Room DB, ensuring data persistence when disconnected from the server.
- > Utilized **Hilt (DI)** to manage network dependencies and lifecycle-aware state propagation.

CoolLib — Native iOS Client

- > Constructed a **SwiftUI** client achieving full **feature parity** with the Android ecosystem.
- > Integrated **SwiftData** and Async/Await for high-performance reactive updates from the **Spring backend**.
- > Leveraged **Combine** for efficient resource fetching and synchronized data modeling.

Consumer Behaviour & Emotions (EPQ)

Grade A*

- > **Stochastic Modeling:** Applied **HMMs** and **PCA** for pattern extraction in complex datasets.
- > **Optimization:** Refined transition matrices to enhance predictive accuracy in behavioral modeling.

EXPERIENCE

Visa – Inside Day Participant

Spring 2026

- > Explored Visa's global payment architecture, focusing on high-concurrency systems and distributed FinTech infrastructure.
- > Engaged with London engineering teams to analyze cloud-native API security and AI-driven fraud detection.

Lumi Academy – Private Tutor

Winter 2024 – Present

- > Delivered 500+ hours of university maths & MAT preparation; 4 Oxford admits, +20% avg improvement.
- > Designed and taught Java & Algorithms (data structures, recursion, sorting).

TECHNICAL SKILLS

Proficient: Kotlin, Java, Swift 6, Spring Boot, Jetpack Compose, SwiftUI

Infrastructure & DevOps: Docker, Docker Compose, Nginx, Cloudflare Tunnel, GitHub Actions

Engineering & Databases: PostgreSQL, JWT Auth, Clean Architecture (MVVM), Hilt DI, SwiftData

Academic Foundations: Haskell, C, Discrete Math, Linear Algebra, Stochastic Modeling