

# SHAOYUAN GUO

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3rd year Computer Science student passionate about building intelligent, human-centered systems that combine design thinking with technical precision. Looking to apply and expand skills in software design and development, AI engineering, and showcase strengths in problem solving, creative innovation to deliver practical and impactful solutions in future careers.

## EDUCATION

**Imperial College London MEng Computing**

Sept 2023 - Jun 2027

- Achieved overall grade over 70% in Year 1 and Year 2, on track of first class degree.
- Relevant courses: algorithm design and analysis, software engineering design, databases, networks and communication, machine learning and deep learning, operating systems, computer architecture, compilers.
- Applied theoretical knowledge through group projects, demonstrating skills in collaborative development.

## PROJECTS

**Capture of You - iOS Photo Journal App Swift, SwiftUI, SwiftData**

Sept 2024 - Jun 2025

- Designed, developed, and launched an iOS photo journal app that empowers users to document their lives through daily photo reflections. Applied strengths in planning and creative thinking, and transformed design ideas and functional goals into a polished, production level app experience.
- Utilised native iOS technologies and implemented secure and efficient data management with SwiftData, incorporating custom access controls and optimized photo retrieval for responsiveness.
- Ensured cross-device scalability and international adaptability through localisation, dynamic layout adjustment.

**Sleepy Camp - Design for Real People Project Flutter, Haskell backend with SQLite**

Summer 2025

- Designed and developed a mobile app prototype to tackle inconsistent sleep habits among students and promote healthier sleep routines through goal-setting, social accountability, and habit-forming features.
- Applied human-centered design methods, iterating through multiple prototypes with continuous user feedback and usability testing, delivered user requested features including “lock-in” mode and social interactions.
- Demonstrated ability to translate user needs into technical design, balancing clarity, functionality, and user engagement while addressing a real and validated problem.

**WACC Compiler Scala, Parsley parser combinator library**

Spring 2025

- Designed and implemented a full compiler for the WACC programming language, building a modular and extensible compiling system from a formal language specification through disciplined engineering practices.
- Applied analytical problem solving and structured thinking skills to modulate architecture as parsing, semantic analysis, optimisation and code generation, and systematically handled compilation errors.
- Maintained comprehensive testing framework to validate compiler correctness and robustness across each compiler stage. Displayed strong engineering rigour, delivering a reliable and maintainable compiler.

## EXPERIENCE

**IBM AI Engineering Professional Course**

Jun - Sept 2025

- Completed intensive program covering supervised & unsupervised machine learning, neural networks, and generative AI. Gained hands-on experience with tools including Python, Keras, TensorFlow, PyTorch, and applied deep learning techniques for computer vision and natural language processing.
- Trained, fine-tuned and utilised LLMs with transformers using Hugging Face, LangChain and RAG. Developed a interactive project implementing generative AI for answering queries based on given knowledge document.

**Volunteer at IC Hackathon**

Jan - Feb 2025

- Oversaw student participants during the event, ensuring smooth coordination and adherence to schedules.
- Facilitated group sessions, encouraged team collaboration and supported students in developing project ideas.

**English Tutor for ESL students**

Aug - Sept 2024

- Tutored non-native speakers in improving English speaking skills and building confidence through one-on-one sessions. Assisted students in understanding cross-cultural communication through a language perspective.
- Developed and adapted individual teaching plans to meet learners' varied goals and learning styles.

## COMPUTER LANGUAGES

- Proficient: Java, Kotlin, Swift • Experience in: Python, C, Dart, Scala, SQL

## EXTRACURRICULAR

Photography enthusiast, member of Photography Society and dark room at Imperial College