Yinghao (Peter) Guan

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Summary

A Computer Science student with hands-on experience in data analysis, AI applications, and full-stack development. Delivered 8+ academic and independent projects, including an AI-powered language learning game and a behavioural economics study using PLS-SEM. Adept in Python, Java, and C#, eager to contribute analytical and problem-solving skills to a software or data-focused internship.

Education

Santa Monica College, Computer Science — Sept 2025 – Expected Transfer: Fall 2027

University of Edinburgh, BEng in Computer Science — Sept 2022 – July 2024

Relevant Coursework: Software Engineering, Data Structure, Reasoning and Agents

Projects and Activities

Custom Markup Language Editor & Converter — Aug 2025 - Present

- Engineered a desktop application with **JavaFX** and **ANTLR4** to parse a custom markup language into an Abstract Syntax Tree (AST).
- Designed a robust system using the Visitor pattern to convert the AST to a Pandoc AST, enabling seamless conversion to HTML and LaTeX.
- Implemented the application using the **MVVM architecture**, significantly enhancing its extensibility and testability.
- Adhered to professional software engineering practices, including clean commit history with **Conventional Commits** and comprehensive **Javadoc**.

UCLA HCI Research Collaboration — Jul 2025 – Present

- **Led a research project** with a UCLA HCI faculty member, investigating the impact of **eXplainable AI (XAI)** on user trust and empathy in emotional support LLMs.
- **Designed and conducted an A/B test**, implementing two distinct AI models – a baseline LLM and a version integrated with XAI and sentiment analysis for user emotion detection.
- **Analysed user survey data and model outputs** to perform both qualitative and quantitative analysis, preparing to publish a peer-reviewed paper as the **sole author**.

Independent Research: Behavioural Modelling of Excessive Trading — Jan 2025 – Apr 2025

- **Architected the technical pipeline** for a team research project, investigating the effects of behavioural biases (FoMO, Anchoring, Herding) on excessive trading.
- **Developed a comprehensive data analysis workflow** using **R** for the core **PLS-SEM modelling**, and **Python** (pandas) for data acquisition and cleaning.
- **Engineered a hybrid computational environment in WSL** to seamlessly integrate Python and R (via rpy2) for complex data processing and statistical analysis.
- **Generated visualisations** with Matplotlib and Seaborn to communicate key findings on behavioural bias patterns.

Additional Information

Skills

- **Languages:** Python, Java, C++, C#, C, R, Haskell
- **Frameworks & Libraries:** pandas, statsmodels, sklearn, seaborn, Matplotlib, JavaFX, JUnit5
- **Tools & Technologies:** Git, Maven, LaTeX, Markdown, ANTLR4, Unity2D

- **Concepts:** Data Structures, Algorithms, Object-Oriented Programming (OOP), MVC/MVVM Architectures, Compilers

Languages

- **Chinese**: Native Proficiency
- **English**: Fluent / Professional Working Proficiency
- **Spanish**: Elementary Proficiency