Zhiyang Lu

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Education

National University of Singapore Jul 2022 – Present
Bachelor of Computing in Computer Science & NUS College, GPA: 4.87/5.00 *Singapore*

- **Awards:** SoC Dean's List x2, Top Students Award - AI & ML, NUS College International Scholarship.

Rangitoto College Jan 2017 – Nov 2021
International Baccalaureate DP, Grade: 45/45 (Valedictorian / Dux Litterarum) *Auckland, New Zealand*

- **Awards:** NZQA Outstanding Scholar 2020 & 2021 - Ranked top 50 among a national cohort of 160,000 students.

Achievements

NZ International Mathematical Olympiad Squad Member 2021
New Zealand Mathematical Olympiad Committee *Auckland, New Zealand*

- Selected as one of 12 representatives for New Zealand to compete in international level maths olympiads.
- Honourable Mention in Asian Pacific Mathematical Olympiad, Silver Medal in New Zealand Mathematical Olympiad, Bronze Medal in Australian Mathematical Olympiad.

Experience

Optiver December 2025 - February 2026
Incoming Software Developer Intern *Sydney, Australia*

DRW Holdings May 2025 – August 2025
Software Developer Intern *Singapore*

- Optimised performance-critical trading component in C++ using template metaprogramming.
- Improved in-house Python dependency-graph library by replacing performance critical code with C++ bindings to reduce execution-time by 10x.
- Developed a new API for OpenSSL write functionality in C that supports vectored IO to reduce the number of records sent over the network (Pull Request #27768)
- Implemented zipping feature in C++ that handles the creation of zip archives and file compression to automatically convert npy files to npz.

Octava Digital Assets May 2024 – August 2024
Quantitative Developer Intern *Singapore*

- Researched and developed crypto asset trading strategies ranging from technical forecasts, sentiment analysis, and regression/machine learning approaches.
- Established an efficient and comprehensive pipeline to evaluate trading strategy performance which integrates into the existing portfolio allocation infrastructure.
- Conducted extensive analysis on macro factors that potentially influence the price action of crypto portfolios.
- Deployed a cloud-based application that monitors daily price movements, generates a PDF containing statistics and visualised charts, and emails the portfolio performance report to investors.

Projects

CryptograFace, Encryption via Facial Biometrics | *C++, Python, OpenCV, Dlibs, MediaPipe, Crypto++, Qt*

- Stores a directory of text-based information and visual digital canvases created by tracking user hand gestures and finger movements within a live camera feed.
- Encrypts user data using the Advanced Encryption Standard, ensuring confidentiality and authenticity.
- Facial biometrics authentication system ensures high precision by employing deep learning models.
- Dynamic graphical user interface built with multi-threaded architecture to guarantee responsiveness.

InterviewAce, AI Technical Interviewer | *Python, Flask, React.js, OpenAI*

- Live Coding Environment allows candidates to write, compile, and execute code in real-time.
- AI-driven transcription achieves real-time language processing to create immersive interview experience.
- Optimised platform responsiveness with advanced audio libraries and efficient asynchronous JavaScript calls.