Zhiyang Lu

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EDUCATION

National University of Singapore — Jul 2022 – Present
Bachelor of Computing in Computer Science & NUS College, GPA: 4.88/5.00 — *Singapore*
- **Awards:** Dean's List AY2023/24 Semester 2, NUS College International Scholarship.

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

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.

NZQA Outstanding Scholar — 2020 & 2021
New Zealand Qualifications Authority — *Auckland, New Zealand*
- Ranked top 50 among a national cohort of roughly 160,000 students.
- Outstanding pass in Calculus, Physics, and Chemistry. Scholarship pass in English.

EXPERIENCE

Quantitative Developer Intern — May 2024 – August 2024
Octava Digital Assets — *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, PyAudio*
- 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.
- Integrated live video feedback provides users with an accurate simulation of an in-person interview.

Medical Management System | *Python, Flask, MySQL, HTML, Bootstrap5*
- Deployed full-stack web application currently in use by health-centres based in Kampong Chhnang, Cambodia.
- Designed a responsive and intuitive interface, ensuring accessibility and facilitating efficient data entry.
- Integrated SQL for robust backend database management with data validation and error handling mechanisms.
- Participated in on-site visits to study local conditions and collaborated with Water and Healthcare Foundation.

TECHNICAL SKILLS

Languages: C / C++, Java, Python
Frameworks / Libraries: OpenCV, Qt, Flask, NumPy, pandas, scikit-learn, PyTorch, Matplotlib
Developer Tools: GitHub, CLion, IntelliJ, PyCharm, Visual Studio Code, VIM