

# 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 AY23/24 Sem 2, 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*

## 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