

# Lim Ker Yew

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## Introduction

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I am a Computer Science with Artificial Intelligence graduate from the University of Nottingham Malaysia with a focused interest in Generative AI, intelligent workflow automation, and financial technology. I have hands-on experience architecting autonomous agentic workflows, local RAG pipelines, and fintech solutions. Building on a strong foundation in scalable web application development, I design data-driven backend architectures that integrate technologies such as MCP, n8n, and vector databases to solve complex business problems. Drawing on my experience as the former President of the University Investment Club, I bring initiative, adaptability, and a strong sense of ownership to my work. Whether directing initiatives as a leader or collaborating within an engineering team, I am committed to delivering high-impact results.

## Education

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### University of Nottingham

2021 - 2025

- *BSc(Hons) Computer Science with Artificial Intelligence*
- *Second Upper Class Honours*
- *Cultural Exchange Program in United States (June 2024 - Sept. 2024)*

### University of Nottingham

2020 - 2021

- *Foundation in Science*
- *CGPA: 3.75/4.00*

### SMK Lutong

2015 - 2019

- *SPM: 7A, 3B+*

## Significant Projects

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### AI-Based Risk Assessment and Portfolio Diversification in Stocks

[github/repo ↗](#)

(Final Year Project)

- Architected and deployed a full-stack hybrid robo-advisory platform using Python and Streamlit, integrating the Financial Modeling Prep API to retrieve real-time market data, company profiles, and discounted cash flow (DCF) values.
- Engineered an adaptive investor profiling engine that seamlessly transitions from a deterministic rule-based algorithm to a Scikit-learn Random Forest Regressor, processing demographic and behavioral data to predict continuous risk scores with an  $R^2$  of 0.91.
- Developed a machine learning stock screener by training a Random Forest Classifier on historical S&P 500 data, utilizing synthetic oversampling and technical indicators (RSI, MACD, Bollinger Bands, and Moving Averages) to categorize equities into dynamic risk tiers.
- Designed a valuation-weighted portfolio allocation algorithm that dynamically matches user risk profiles with customized equity recommendations, enforcing automated rebalancing protocols to prevent sector overconcentration and ensure robust diversification.

**Tools:** Python, Random Forest, Scikit-learn, Streamlit, Financial APIs, SQLite

### Local Agentic AI File Explorer

[github/repo ↗](#)

- Architected a privacy-first, local AI file explorer utilizing a custom FastAPI backend and Ollama on Apple Silicon, enabling semantic search and file manipulation with zero external cloud dependencies.
- Engineered an automated data observability pipeline using Python's watchdog daemon and asynchronous background threading (asyncio) to dynamically monitor local directories, utilizing timestamp deduplication to update a Qdrant vector database in real-time.

- Implemented LLM function calling (Agentic AI) to bridge natural language queries with native macOS file operations, allowing a local Llama 3 model to autonomously execute Python system commands.
- Developed a decoupled, responsive React frontend using Vite and Tailwind CSS to visualize live local directory trees and stream real-time AI responses via custom REST API endpoints.

**Tools:** Python, FastAPI, Ollama, Llama 3, Qdrant, React, Vite, Tailwind CSS, Asyn-cio

### Real-Time Eye-Tracking Application

[github/repo](#)

- Engineered a native Android cognitive assessment application in Java, integrating Google ML Kit's Face Detection API to perform real-time facial landmark identification and evaluate eye-open probabilities.
- Architected a real-time computer vision pipeline utilizing OpenCV to isolate and track user irises through a sequence of grayscale conversion, adaptive thresholding, morphological operations, and Canny edge detection.
- Implemented spatial tracking algorithms using image moments to calculate the centroid of iris contours for precise gaze detection, seamlessly exporting analyzed reaction time and accuracy data into formatted Excel reports.

**Tools:** Java, Android SDK, Google ML Kit, OpenCV, Image Processing, Gradle, Git.

## Experience

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### Cultural Exchange Program

*Sales Associate at Surf Style Retail*

United States of America  
June 2024 - Oct. 2024

- Executed daily store operations, managed high-volume inventory, and handled cashier duties in a fast-paced retail environment.
- Adapted quickly to a multicultural workplace, communicating effectively with international teams and customers to solve problems on the floor.

### Investment Club

*President*

University of  
Nottingham, Malaysia  
Sept. 2022 - Apr. 2023

- Directed the executive committee to organize practical workshops and networking events, actively promoting financial literacy across the student body.
- Partnered with industry professionals to host technical sessions, giving students direct insight into real-world investment strategies and market trends.

### Fusionex

*Web Developer*

Remote  
June 2022 - Aug. 2022

- Built and shipped scalable web application features using React.js and Node.js, directly improving platform functionality and the end-user experience.
- Worked closely within an 8-person cross-functional engineering team to deliver code on tight deadlines, actively participating in peer reviews to maintain code quality.

### Finspark

*Course Consultant Assistant*

Remote  
Apr. 2021 - Aug. 2021

- Led the front-end development and UI redesign of the main course website, making the platform more accessible and easier to navigate for users.
- Digitized and structured core finance materials into the new system, accelerating the onboarding process for new students.

## Skills

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**Languages:** Python, C, Java, SQL, JavaScript, Dart

**Frameworks & Libraries:** TensorFlow, Scikit-learn, XGBoost, OpenCV, React.js, Node.js, Flutter, Streamlit

**Tools & Infrastructure:** Git, Docker, Android Studio, Microsoft SQL Server, SQLite