

Victor Lai

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EDUCATION

National University of Singapore

Aug. 2022 - Present

Bachelor of Computing (Honours) in Computer Science

Focus Areas: Database Systems, Parallel Computing

NUS Global Merit Scholar

EXPERIENCE

Morgan Stanley

May 2024 – Aug. 2024

Technology Summer Analyst

- Developed a close-based generative AI chatbot with Retrieval-Augmented Generation and LLM for FX trading
- Implemented an ETL pipeline to expand and transform knowledge base in Redis, increasing data availability and optimizing data formatting for search
- Engineered a hybrid document similarity search, by chaining embedding and statistical based vectorizers coupled with cross-encoding model using Scikit-learn and Pytorch, attaining a search accuracy of 92%
- Developed an accuracy testing framework to evaluate model responses, combining ROUGE, METEOR metrics
- Achieved 74% answers accuracy with a compact 248M parameter LLM, with HuggingFace transformers
- Researched on LLM architectures, optimized prompt variations and applied CPU-friendly inference methods

Switchco Labs

May 2023 – Jul. 2023

Software Engineer Intern

- Engineered 14 new database tables while developing Node.js scripts to facilitate real-time tracking of trading insights (trading volumes, P&L, staking rewards, coin prices, etc.)
- Implemented REST APIs for the trading exchange's users address book feature
- Devised backend indexer to map EVM transactions to Cosmos hash on EVM Block Explorer with Elixir
- Migrated EVM Explorer website and database servers from AWS to GCP and configured CI/CD pipeline
- Built CRON jobs to populate on-chain data into spreadsheets, reducing daily operational time by 1 hour

Cyberlitmus

Jan. 2022 – Apr. 2022

Software Engineer Intern

- Developed several RESTful APIs in Go, handling data for large user groups
- Integrated automated CRON jobs for efficient data updates and generating email reports of email breaches
- Created over 25 interactive front-end websites simulating real-world phishing attacks with Angular

PROJECTS

Ticket Nerd: Microservices simulating sports games ticketing system | *Java, Spring, MySQL, MongoDB*

Order Matcher: Matching engine logic emulating matching of market buy and sell orders | *Go*

Pitch Your Idea: Full-Stack website for users to pitch and connect with collaborators | *Django, PostgreSQL*

TECHNICAL SKILLS

Languages: C, C++, Go, Java, Python, SQL, TypeScript

Frameworks: Angular, Django, Hadoop, MapReduce, Node.js, NumPy, Pandas, Pytorch, Spark, Scikit-learn, Spring

Developer Tools: Docker, Git, Google Cloud Platform, IntelliJ, Kubernetes, PgAdmin, Postman, VSCode

Databases: MongoDB, MySQL, PostgreSQL, Redis