

# Alden Sio

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## EDUCATION

### National University Of Singapore

Singapore

*Bachelor of Science in Business Analytics (Computing)*

*Aug. 2022 – Apr. 2026*

*Teaching Assistant: CS2030 (Programming Methodology II), BT1101 (Introduction to Business Analytics)*

## WORK EXPERIENCE

### Tiktok

Singapore

*Machine Learning Engineer*

*Jan. 2025 - Present*

- Architected **Agentic Deep Research** using internal & external tools for automated report generations, reducing manual editing efforts by **20 hours weekly**.
- Established a scalable framework for generating **high quality synthetic datasets** to enhance model training diversity, increasing model robustness by **20%** as measured by cross-validation metrics
- Fine-tuned language and object detection models using **LoRA**, achieving a **55%** boost in semantic evaluation accuracy and a **47%** improvement in image classification performance
- Built a **Topic Modeling** pipeline using **BERTopic** and various in-house tools, processing over **4 million videos** and parallelizing workflows to achieve a **70%** reduction in runtime

### Synapse

Singapore

*Machine Learning Engineer*

*May. 2024 - Oct. 2024*

- Pioneered a **Self-RAG** and **RAG-Fusion** system using **AWS Bedrock**, boosting response relevancy by **60%** and slashing hallucination rates from **40%** to **2%**
- Engineered a multi-modal data ingestion pipeline with **Kedro**, automating processing of text, tables, and images to save over **150 annual hours** in manual effort
- Integrated **GraphRAG** for extensive context understanding, constructing a **50k** entity knowledge graph from unstructured data

### Panda Commercial Bank PLC.

Phnom Penh, Cambodia

*Software Engineer*

*May. 2023 – Aug. 2023*

- Implemented and deployed scalable microservices overseeing **e-Wallet transactions** & **e-KYC**
- Devised Data Pipelines for Data Cleaning, Extraction, & Analysis, reducing development time by **25%**

## PROJECTS

### Agent Visualiser (GitHub) | *LangChain, LangGraph, Milvus, Neo4j, Chainlit*

*Sep. 2024 – Oct. 2024*

- Built an E2E Agentic-Hybrid-RAG Chatbot to help my colleagues visualise Agentic Interactions
- Accelerated team productivity by **30%** by streamlining knowledge transfer and reducing learning curves
- Incorporated a multitude of techniques within Agents (**Flow Engineering**), RAG (**Self-RAG, CRAG**), Knowledge Graphs (**Multi-Hop Traversal**), and Vector and Graph Databases (**Milvus, Neo4j**)

### FashoReco (GitHub) | *pandas, sklearn, word2vec, scaling, clustering*

*Jan. 2024 – May. 2024*

- Developed an ensemble Recommendation System using a Time-Infused Collaborative Model, and a Time-Decay Content Based Model, improving recommendation hit rate from **0.03%** to **0.20%**
- Employed Multi-Dimensional Clustering to facilitate in-depth Network Analysis for tailored recommendations
- Lauded for project quality and encouraged by Professor to write a conference paper for submission to HICSS

### InTurn (Website) | *HTML, CSS, Vue, JavaScript, Firebase, RESTful APIs*

*Jan. 2024 – May. 2024*

- Created an all-in-one internship tracking Web-app, saving sourcing overhead time by a week
- Managed and led a team of 5 developers to complete the project a month earlier than planned

## TECHNICAL SKILLS

**Programming Languages:** Python, Java, R, Tableau, SQL, JavaScript, HTML, CSS

**Developer Tools:** AWS, Git, Postman, Firebase, Google Cloud Platform, Docker

**Libraries/Packages:** Vue, PyTorch, React Native, langchain, langgraph, FastAPI, LlamaIndex, Neo4j