

Cogal Jacques Tracy Pasaol

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EDUCATION

Nanyang Technological University, Singapore

Aug 2020-May 2024

Double Degree Programme (Double Distinction & Honours)

Bachelor of Engineering (Computer Science) and

Bachelor of Business (with specialization in Business Analytics)

Temasek Polytechnic

Apr 2015-Apr 2018

Accounting and Finance (Diploma with Merit)

WORK EXPERIENCE

Shopee

Singapore

Software Engineer

Jun 2024-Present

Leveraged these tools: Golang, MySQL & nginx

Marketplace core

CPF Board

Singapore

Software Engineering Intern

Dec 2023-May 2024

Leveraged these tools: Python (FastAPI), JavaScript (Next.js) and Azure Cloud

Involved in projects relating to large language models and data engineering

- Optimised information retrieval of customer-facing internal search engine, improving search relevance by up to 10%
- Streamlined search index creation with azure functions

JP Morgan Chase & Co.

Singapore

Software Engineering Intern

Jun 2023-Aug 2023

Leveraged these tools: Python, Java, JavaScript (React.js), Oracle Database and Amazon Web Services

Delivered key projects in artificial intelligence and proxy gateway solutions for the financial crimes and asset wealth management teams

- Engineered data pipelines to channel big data into AI models, generating actionable insights for risk assessments
- Developed an SDK that enabled a microservice usage, reducing API gateway calls by over 90% through a proxy with a caching layer
- Integrated the SDK solution with an in-production software to prove its efficacy
- Led a hackathon team to victory at JP Morgan's internal Global Hackathon by developing an innovative anti-money laundering solution

Zuellig Pharma

Singapore

Data Analyst Intern

Sep 2022-Dec 2022

Leveraged these tools: Python, PostgreSQL Database and Tableau

Engineered data solutions for large-scale, unstructured pharmaceutical datasets, streamlining machine learning model training for data scientists

- Automated data retrieval and cleaning, optimizing machine learning training pipelines
- Validated data cleaning effectiveness via hypo testing, achieving at least 70% population coverage
- Adapted to stakeholder feedback and managed time between projects to deliver successful products for managers in a timely manner

AWARDS AND HONOURS

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|---|-------------|
| Champion of GIC Code to Impact 2023 | 2023 |
| Developed AI enabled full stack solution as full-stack, ai and dev-ops engineer | |
| Dean's Honours List AY2022/2023 (BUS) | 2023 |
| Top 5% of student cohort based on annual academic performance | |
| Champion of J.P Morgan Global Hackathon Singapore 2023 | 2023 |
| Team and frontend lead for a proof of concept serving internal stakeholders | |
| Champion of J.P Morgan Code for Good 2022 | 2022 |
| Designed, developed and deployed solution to address social enterprise problem | |

PROJECTS

Portfolio Chatbot (Retrieval Augmented Generation AI Chatbot)

TechStack: React, Python Flask, LangChain, OpenAI, AWS EC2, Docker and Pinecone

Site: jacquescogal.github.io

GitHub (Frontend): github.com/jacquescogal/jacquescogal.github.io

Docker Repo (Backend): docker.com/repository/docker/jacques002/portfolio

Built portfolio with AI chatbot feature that returns context rich answers to users about myself

- Leveraged latest vector database technology in Pinecone to quickly retrieve relevant document context
- Deployed backend retrieval augmented generation (RAG) AI on ec2 instance

FlashCard AI (Leverage LLM as a personal flashcard mentor)

TechStack: React, Python Flask, OpenAI and Amazon Web Services (Lambda, Cloudfront, DynamoDB and etc.)

Site: flashcardai.app

GitHub: github.com/jacquescogal/FlashCardAI

Developed a full-stack web-app that leverages the GPT-4 and AWS infrastructure to deliver an improved flashcard learning experience

- Deployed backend flask with RESTful API design on EC2 with elastic bean stalk
- Implemented user session authentication with JWT access tokens
- Used API gateways to enforce a limit on API calls to prevent abuse and manage cloud service costs

Golang Marketplace app

TechStack: Golang (HTTP + TCP server), nginx, mysql, redis and wrk

Developed marketplace app with millions of rows as an optimisation exercise

- Leveraged Go's concurrency to manage connection pools
- Applied test-driven development leveraging go's testing packages
- Leveraged snowflake algorithm to create uuids for sharded tables
- Tested for and minimised bottlenecks with wrk stress tests

SKILLS

Programming Languages: Python, JavaScript (Typescript, React.js, Angular, Node + Express, Next.js), Golang, Java, C++ and C#

CERTIFICATES

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| FOCP: FinOps Certified Practitioner | 2023 |
| AWS Certified Cloud Practitioner | 2023 |