

WILSON YIP

Data Engineer & Scientist bridging the gap between complex mathematical modeling and robust data infrastructure. Leveraged a background in Mathematics to optimize NLP algorithms and build high-frequency asynchronous scrapers. Expert in Python, dbt, and Airflow, with a focus on creating scalable, secure, and observable data environments that ensure data integrity.

EXPERIENCE

OneFineStay

Data Engineer

London

Oct, 2023 - Present

Data Engineering & Infrastructure

- Architected and maintained **ELT pipelines** using **Airflow**, **dbt**, **GCS**, and **BigQuery**.
- Developed **schema detection tools** to trigger full refreshes upon schema changes from upstream source.
- Optimized storage by implementing BigQuery-GCS External Tables, **eliminating data redundancy** and **enabling near real-time access**.
- Reduced query costs by implementing **Hive-partitioned directory structures** for external storage.
- Deployed **CI/CD pipelines** to automate testing on pull requests, **reducing production errors by 90%**.
- Engineered custom **dbt materializations** for BigQuery Functions to provide functionality ahead of native dbt-core support.

Data Observability & Cost Optimization

- Engineered a **cost-governance framework** by aggregating metadata from dbt manifest.json, BigQuery INFORMATION_SCHEMA, GCP Audit Logs, and GCS Inventory Reports.
- Developed **centralized observability tables** to monitor tables, jobs, and GCS blobs, with automated reporting in Looker Studio.
- Reduced **BigQuery expenditure by 80%** through strategic partitioning, incremental modeling, query tuning, and storage billing optimization.

Cloud Infrastructure & Security

- Provisioned and managed GCP infrastructure using **Terraform** and **Docker**.
- Deployed Cloud Functions as webhooks for event-driven architecture.
- Implemented granular security protocols, including **column-level access control** and dataset-specific permissions.
- Containerized Airflow instances for scalable deployment to cloud services.

Tailify Software

Junior Data Analyst (Machine Learning)

London

Jul, 2022 - Jul, 2023

- Engineered features and conducted EDA using **PySpark** and **ElasticSearch**, processing large-scale datasets to **improve model training quality**.
- Developed and deployed **ML models** to predict YouTube audience demographics, serving predictions via a high-performance **FastAPI backend**.
- Optimized NLP matching algorithms by introducing **soft-cosine similarity**, resulting in a **5–10% increase** in top-performer identification.
- Built **asynchronous URL scrapers** to resolve millions of shortened links, **reducing execution time by 90%** through **concurrent processing**.
- Architected and maintained **PostgreSQL** databases, collaborating with stakeholders to design schemas for **complex business requirements**.
- Orchestrated ETL pipelines using **Airflow** to ingest and transform agency performance and operational data.
- Implemented **system observability** by performing **log analysis** with **Grafana Loki** and building performance dashboards in **Grafana**.
- Accelerated internal workflows via **rapid application development**, automating document generation using **Google APIs**, **Slack API**, and **ElasticSearch**.

Various Universities in Hong Kong

Research Assistant (Data Scientist)

Hong Kong

Sept, 2017 - Jan, 2022

- Perform **statistical analysis** and **deploy machine learning models**, including **AB-testing**, **PCA**, **Poisson regression**, **k-means**, **hierarchical clustering**, **LDA topic modelling**, etc. to perform analysis on different types of data. Developed and maintain **RShiny Dashboard** to visualise analysis results.

EDUCATION

Society of Actuaries

Probability (P) Exam

Hong Kong

Mar, 2017

University of Hong Kong

Bachelor of Science

Hong Kong

Sept, 2014 - Jul, 2017

Major: Mathematics/Physics

Minor: Computational and Financial Mathematics

CONTACT INFO

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GitHub https://github.com/wilsonkkyip/

Website https://wilsonkkyip.github.io/

SKILLS

Highlights

Python



GCP



AWS



Docker



Terraform



GitHub Actions



Rust



Data Processing

R



Airflow



BigQuery



dbt



Spark



Tensorflow



Looker Studio



Grafana



PostgreSQL



MongoDB



Elasticsearch



Miscellaneous

Apps Script



Linux Bash



Ruby



D3.js



Administrative

Markdown



LATEX



LANGUAGES

English: Fluent

Cantonese: Native

Mandarin: Fluent

RESUME VERSIONS

Markdown

HTML

PDF