

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   **London**
Data Engineer  *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   **London**
Junior Data Analyst (Machine Learning)  *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   **Hong Kong**
Research Assistant (Data Scientist)  *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. Develop and maintain **RShiny Dashboard** to visualise analysis results.

EDUCATION

Society of Actuaries   **Hong Kong**
Probability (P) Exam  *Mar, 2017*

University of Hong Kong   **Hong Kong**
Bachelor of Science  *Sept, 2014 - Jul, 2017*



Major: Mathematics/Physics
Minor: Computational and Financial Mathematics

CONTACT INFO









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 <https://github.com/wilsonkkyip/>
 <https://wilsonkkyip.github.io/>

SKILLS

Highlights

Python		<div><div></div><div></div><div></div><div></div><div></div></div>
GCP		<div><div></div><div></div><div></div><div></div><div></div></div>
Docker		<div><div></div><div></div><div></div><div></div><div></div></div>
Terraform		<div><div></div><div></div><div></div><div></div><div></div></div>
GitHub Actions		<div><div></div><div></div><div></div><div></div><div></div></div>
AWS		<div><div></div><div></div><div></div><div></div><div></div></div>
Rust		<div><div></div><div></div><div></div><div></div><div></div></div>


Data Processing

R		<div><div></div><div></div><div></div><div></div><div></div></div>
Airflow		<div><div></div><div></div><div></div><div></div><div></div></div>
BigQuery		<div><div></div><div></div><div></div><div></div><div></div></div>
dbt		<div><div></div><div></div><div></div><div></div><div></div></div>
Spark		<div><div></div><div></div><div></div><div></div><div></div></div>
Looker Studio		<div><div></div><div></div><div></div><div></div><div></div></div>
Grafana		<div><div></div><div></div><div></div><div></div><div></div></div>
PostgreSQL		<div><div></div><div></div><div></div><div></div><div></div></div>
Elasticsearch		<div><div></div><div></div><div></div><div></div><div></div></div>
Tensorflow		<div><div></div><div></div><div></div><div></div><div></div></div>

Miscellaneous

Apps Script		<div><div></div><div></div><div></div><div></div><div></div></div>
Linux Bash		<div><div></div><div></div><div></div><div></div><div></div></div>

Administrative

Markdown		<div><div></div><div></div><div></div><div></div><div></div></div>
Latex		<div><div></div><div></div><div></div><div></div><div></div></div>

LANGUAGES

English: Fluent
Cantonese: Native
Mandarin: Fluent

RESUME VERSIONS

[Markdown](#)
[HTML](#)
[PDF](#)