

# 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://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  ●●●●○  
L<sup>A</sup>T<sub>E</sub>X  ●●●●○

## LANGUAGES

English: Fluent  
Cantonese: Native  
Mandarin: Fluent

## RESUME VERSIONS

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