Jonathan Wang

DATA ENGINEER · SOFTWARE ENGINEER

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Experience

Marshall Wace *London, United Kingdom*
DATA ENGINEER *Apr. 2024 - Present*

- **Reduced the latency of the central authentication API by 100x from 5s to 50ms P95 response time.** Built an API layer that reconstructed and cached the Active Directory graph with a sharded Redis cluster to reduce recursive search space and remove redundant calls.
- Built an index rebalance insight parser leveraging generative LLMs. Articles were converted from unstructured HTML to JSON with correctness and schema validation stages. **Delivered structured insights to quant teams databases within seconds of article publication.**

Smarkets *London, United Kingdom*
DATA ENGINEER & SCIENTIST *Sep. 2022 - Apr. 2024*

- Developed an industry-leading recommendation engine. Processed user activity data in an implicit matrix factorisation model; hyperparameter tuning was done using a custom metric suite. A/B testing revealed a **40% increase in engagement** compared to unpersonalised events.
- Implemented an asynchronous Python job using Kafka which loaded archived S3 files without severe I/O bottlenecking for trading backtesting. New system **reduced processing time for terabytes of CSV data to 12 minutes** per day of data, down from 2 hours previously.
- Worked closely with internal DevOps team to migrate Rust and Nix pricing engine data systems from outdated infrastructure to a unified architecture. **Reduced the engineering maintenance effort by 50%** due to unified code architecture.

HomeX *Cambridge, United Kingdom*
APPLIED DATA SCIENCE INTERN *Jun. 2021 - Sep. 2021*

- Built a backend API using Python's FastAPI serving a regression model to 5 other internal services.
- Built a front-end BI data visualisation dashboard using TypeScript and React with interactive street maps and tables.
- Deployed these services using Docker, Kubernetes and Terraform with data ingestion from AWS S3 and Snowflake.

Education

University of Cambridge *Cambridge, United Kingdom*
M.ENG (HONS), COMPUTER AND INFORMATION ENGINEERING *Oct. 2018 - Jun. 2022*

- Graduated **Honours with Distinction** (1st Class thesis & 1st Class exam results).
- First Year: **74%** ; Second Year: Ungraded (As a result of CoVid-19) ; Third Year: **71%** ; Fourth Year: **72.5%**.
- **Masters Thesis**: Developed a large language model that could respond to hate speech using a novel evaluation suite and custom data. Modified cutting edge models such as Blender Bot & GPT-3 to achieve superior performance. Training was done on HPC clusters.

Westlake Boys' High School *Auckland, New Zealand*
5A* AT A LEVEL *Feb. 2013 - Dec. 2017*

Skills

Programming	Python, Rust, REST API, Linux Command Line, Git
Data	Pandas, SQL, Large Language Models, Airflow, AWS S3, Redshift, SQL Server, PostgreSQL, Redis, Kafka
DevOps	AWS, GCP, Docker, Kubernetes, CI/CD, Grafana, ElasticSearch/Kibana

Projects

Conference for Truth and Trust Online *Boston, Massachusetts*
FEATURED SPEAKER *Oct. 2022*

- Gave an on-stage presentation to a 100+ person audience regarding the novel technical contributions to LLM research based on my Master's thesis. (https://truthandtrustonline.com/)

Honors & Awards

2021	**College Prize for Engineering**, Robinson College	*Cambridge, UK*
2019&20	**College Exhibition Awards for Academic Achievement**, Robinson College	*Cambridge, UK*
2017	**New Zealand Outstanding Scholars - Top 50 in Country**, NZQA	*Auckland, NZ*