

# Vichara Nimnaka Wijetunga

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## Programming Skills

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**Languages:** Python, Java, Scala, C++, JavaScript, PHP, SQL

**Data & Infrastructure:** Spark, Airflow, Kafka, Hive, Hadoop, Parquet, Kubernetes, Docker, Nginx, Terraform, PostgreSQL

**AWS:** EMR, DynamoDB, DataPipeline, NAT, Route53, SQS, SNS, S3, VPC, ElastiCache, RDS

## Experience

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### SnapTravel

Toronto, ON

*Data & Infrastructure Engineering Intern (medium.com/@nim.wijetunga)*

September - December 2019

- Implemented an **EMR (AWS Elastic MapReduce)** Deployment Workflow, utilizing custom **Airflow Operators** to submit **Spark** Jobs, and **CI/CD** to deploy Spark resources to **S3**, gaining full adoption by the Data Engineering Team
- Integrated **EMR** with **Zeppelin Notebooks** and SnapTravel Internal Tools, improving Analyst workflow speeds by **50%**
- Migrated a CPU intensive Python ETL to **PySpark SQL**, using **Hive** Tables to store data, improving runtimes by **80%**
- Improved Hotel Catalogue Data Ingestion Speeds by **85%+**, utilizing **AWS SQS (Queue)** to stream data across **distributed** Airflow workers and Python **Concurrency** (Asyncio/Asyncpg) to improve I/O bottlenecks
- Built **Datadog** Dashboards using **Terraform** to monitor **RDS & ElastiCache** services, helping identify **15+** incidents
- Migrated Airflow Deployment to Astronomer (Airflow IaaS), using **Terraform** for provisioning **NAT** Instances (with **iptables** - Port Forwarding, **Nginx** - Reverse Proxy) to access ElastiCache clusters inside the AWS **Private Subnet**

### SnapTravel

Toronto, ON

*Backend Engineering Intern (medium.com/@nim.wijetunga)*

January - April 2019

- Designed and Implemented three key **ETLs**: Supplier Availability, Supply/Demand and Expired Rates
  - Transformed **100M+** rows of logs, pushing our Data Warehouse (**Snowflake**) size from **500GB to over 9TB**
  - Visualized** ETL data (using **PeriscopeData**) into **SOV** (Share of Voice) and **Spread-to-Bar** reports
- Implemented a **2 Factor Authentication (2FA)** Microservice
  - Experimented with Python-Flask **rate-limiting** to reduce the chance of a **TOTP brute force** attack by **92%**
- Increased **conversion** for the **Business Traveller** Program by **10%** after implementing its first perk: **Uber Vouchers**
  - Implemented a **Redis Caching Layer**, providing **2x** the speed compared to direct **Postgres** access

### The Weather Network

Toronto, ON

*Full-Stack Developer Intern*

May - August 2018

- Implemented **AMP** (Google's Accelerated Mobile Pages), reducing forecast page load times by **1.5s** (mobile)
- Introduced data aliasing for **PHP** endpoints, reducing API request time by **0.5s** (client side)
- Implemented the **MVC** design pattern for backend API's, using the **CodeIgniter** (PHP) framework
- Developed test suites (employed **TDD**) using **Jasmine**, **Mocha** and **PHPUnit**, maintaining **80%** test coverage
- Built **RESTful API** endpoints for displaying news articles provided by the **CMS**

## Education, Courses & Awards

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### University of Waterloo

Waterloo, ON

*Bachelor of Software Engineering (3rd Year); CGPA: 3.8, Dean's Honours List 2018*

September 2017 – April 2022

**Scala & Spark (Udemy):** Scala Basics, Spark **RDDs/Dataframes**, Spark **SQL**, **MLlib**, Spark **Streams** and Spark on **EMR**

**Kafka (Udemy):** Brokers, Partitions, Producers/Consumers, **Zookeeper** Management, Kafka **Connect** and Kafka **Streams**

**Awards:** PennApps 2018 🏆 Best Campus Life Hack Runner-Up, DeltaHacks 2018 🏆 Best Healthcare Hack Runner-Up

## Extracurricular Activities & Hobbies

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### UWBlueprint, Infrastructure Developer 🌐

Containerized a Flask and PostgreSQL Application using **docker-compose**, built a **CI/CD** integration with **Github Workflows** to deploy the app to a **Heroku** Environment and experimented with **Kompose** to deploy the app to a **Kubernetes** Cluster

**Hobbies:** Swimming, Cooking (and Eating!), Video Games, Travelling, Reading (TechCrunch, Morning Brew)