Michael F Vertuli - Software Engineer

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I'm a software engineer enthusiastic about functional programming with experience in:
- **backend engineering**, implementing data scraping infrastructure from various sources at scale,
- **data engineering**, building highly performant high-volume big data pipelines on distributed architecture,
- **data science**, applying statistics / machine learning on large-scale datasets, and
- **frontend engineering**, building dashboards delivering quality user experience for exploring data.

Job History

Spotify, Software Engineer (Remote), New York, NY 04/2022 - Present

Premise Data, Software Engineer (Remote), San Francisco CA, 12/2021 - 03/2022
- Migrated critical backend core services, written in functional Scala using **http4s**, **cats-effect**, **tapir**, etc., from **Google Cloud Platform (GCP) App Engine** to **GCP Cloud Run**.
- Spearheaded development of new generalizable **continuous integration / continuous delivery (CI/CD)** pipelines, helping implement them across teams, using **GitHub Actions**, **GCP Cloud Build**, and **GCP Artifact Registry** to replace legacy **Travis CI** and Artifactory backed workflows.
- Built a centralized repository for **OpenAPI** specs and general purpose GitHub Actions workflows to automatically generate and publish **Scala**, **Java**, and **Python** client libraries for core service APIs.

Datasembly, Software Engineer (Remote), Washington, DC, 11/2020 - 10/2021
- Delivered dozens of scrapers and tools (mostly in purely functional **Scala**; some **Javascript** and **Rust**) to regularly collect millions of points of retail and grocery data from diverse public APIs and mobile sources.
- Quickly learned our scraping software architecture (dependent on Scala libraries and frameworks like **cats**, **monix**, **play**, and various HTTP backends and Javascript tools), shipping a scraper within my first weeks.
- Drove engineering initiatives to develop scrapers following best practices, publicly demonstrating how to build scrapers following **test-driven development (TDD)** principles and emphasizing writing **clean code**.
- Supported data processing and product facing teams (using **Kafka**, **Snowflake**, **BigQuery**, **Airflow**) in a cloud environment using GCP.
- Worked within a multi-functional **Agile** software environment (hybrid Scrum and Kanban).

Factual (now Foursquare), Software Engineer, Los Angeles CA, 03/2019 - 04/2020
- Deployed **machine learning** to model valuable new customer segments products (using **spark.ml** and **scikit-learn**) collaborating cross functionally and experimenting with data scientists.
- Replaced our core pipeline built on **Hive** (using **SQL**) queries with new type-safe, robust, testable pipelines designed using **Spark**'s Datasets API (written in purely functional Scala).
- Championed the usage of **Airflow** (using **Python**) across the organization, first demonstrating its usage on our team to help coordinate processing terabytes of real-time location data into Insights data products.
- Helped to influenced specific changes to our **distributed systems** architecture when migrating some data storage and data processing from our **Hadoop** cluster to **Amazon Web Services (AWS)**.
- Basic frontend design (using **PostgreSQL** and **Django**) for quick delivery of data insights, pipeline analytics, and real-time data quality information and alerting for a cross functional internal audiences.
- Regularly released reports of data analysis (using **Jupyter**) to key stakeholders, as well as regularly giving live presentations of key team advancements to the company.
- Worked within an Agile scrum team using standard technologies like **git** / **GitHub**, **TeamCity** / **Jenkins** for CI/CD, **Docker**, **Kubernetes**, etc.
- Volunteered with recruitment efforts and mentoring.

Freelance, Tutor, Washington DC and Los Angeles CA, 03/2016 - 03/2019

Landon School, Math Teacher, Bethesda, MD, 08/2016 - 01/2017

Newton American Education Studio, Founder, Shanghai China, 07/2011 - 03/2016

Shanghai Normal University, Physics Teacher, Shanghai China, 08/2009 - 06/2011

Education

Pennsylvania State University, B.S. Physics, 2008