

William Hunter Giles

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WORK EXPERIENCE

Senior Software Engineer, NCR

Atlanta, GA | July 2022 – Present

Forecasting Restaurant Sales Platform

- Led infrastructure design for a ML platform POC forecasting store and item level sales across hundreds of stores and multiple customers (scalable to thousands)
- Designed data pipelines in Python moving terabytes of data from BigQuery to Databricks Delta Tables, applying the medallion architecture for reliable feature preparation.
- Implemented Python PySpark structured streaming/autoloader to process transaction events.
- Orchestrated pipelines with Databricks Jobs, ensuring robust data ingestion, transformation, and offline feature store management.
- Partnered with data scientists to integrate PyTorch/Keras neural networks and ARIMA models, enabling real-time predictions stored back into BigQuery for consumption by production applications.
- Built the foundation for a scalable ML infrastructure ecosystem, ensuring extensibility and maintainability for future customers.

Aloha Smart Manager – Microservice Development

- Developed NCR's smart product using a NestJS microservice backend and React for the frontend, delivering a scalable and maintainable architecture.
- Led and designed a solution for key accounting features, breaking the work into parallelizable tickets and guiding a team of engineers to enable customers to map general ledger accounts to job codes.
- Leveraged Postgres for data storage, BigQuery for analytics, Pub/Sub for async communication, and MUI for frontend components.
- Built reusable NestJS modules for Pub/Sub messaging, error handling, and logging to ensure consistent functionality across microservices.
- Engineered a solution to dockerize a legacy .NET service and Postgres database. This strategy was used for local development reducing development time significantly.
- Spearheaded microservice deployments, ensuring seamless integration and performance across environments.
- Applied Inversion of Control (IoC) frameworks to decouple components and improve maintainability.

Aloha Smart Manager – CI/CD Platform

- Architected CI/CD platform using GitFlow, GitVersion, semver, and GitHub Actions, eliminating a two-day code freeze and standardizing release across environments and microservices.
- Created a TEST environment for microservice app using Terraform to deploy Dockerized services on Cloud Run, incorporating load balancing, DNS configuration, and Firebase for frontend hosting.
- Designed scalable deployment pipelines to automate releases and ensure consistent environments across Dev, Test, and Prod.

Aloha Next – Kubernetes Edge Development

- Led DevOps for NCR's next-generation Aloha POS project by building a separate Kubernetes-based development environment so the team could test and deploy without waiting on the core NCR Edge process.
- Installed Ubuntu and k3s on 10 POS devices and designed deployments for resource-constrained hardware using single-node clusters and efficient service organization.
- Set up GitOps deployments with Flux, GitHub, and Kustomize to give the team a consistent and faster way to manage edge environments.

United States Air Force

Warner Robins, GA | July 2019 – August 2021

- Worked as Program Manager for F-15 Saudi Arabian FMS
- Obtained Secret Security Clearance

SELECTED RESEARCH

Pregnancy on Medicaid Expansion

- Built a difference-in-differences and event-study framework to estimate the causal effect of ACA Medicaid expansion on pregnancy rates using BRFSS data.

- Constructed and analyzed a sample of 383,740 low-income women ages 18–44 across 2011–2016, with demographic controls and robust standard errors.
- Implemented a generalized synthetic control robustness check using state-level panel aggregates from 2001–2016.
- Found no statistically significant treatment effect, while identifying directional post-policy trends for further study.

Synthetic Equity Return Modeling with Copulas

- Built a statistical model of AAPL and AMZN returns using fitted marginal distributions and copulas to capture cross-asset dependence.
- Used maximum-likelihood estimation, AIC-based model selection, and Kendall’s tau to evaluate alternative distribution and dependence models.
- Generated synthetic return data preserving both individual asset behavior and joint correlation structure.

EDUCATION

Georgia State University

Master’s in Econometrics, Dec. 2022

GPA: 4.2

Atlanta, GA

Georgia College

Bachelor of Science in Economics, May 2020

Milledgeville, GA

COMPUTER SKILLS & PROJECTS

Technologies

- Languages (*ranked in order of experience*): TypeScript, Python, Java, c#, terraform
- Frameworks (*ranked in order of experience*): NestJS, spring, .Net
- Other: Google Cloud Platform (GCP), Apache Spark, Databricks, Docker, Postgres, GitHub Actions