

Derek Fulton

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Experience

Bayview Asset Management

Miami, USA (and remote)

ASSOCIATE - DATA SCIENCE

Oct 2022 - Apr 2024

- Developed (frontend and backend) and managed a very popular internal Chrome Extension (**JS/Python**) to deliver analytics directly to team of **100+** mortgage loan officers who service over **\$600b** of outstanding mortgage balance
- Cut over **\$50k/mo** of costs by selectively deploying open-source solutions (such as **PostgreSQL**, **Milvus** and **others** to replace Microsoft and Intex products
- Developed full-stack **Streamlit** applications used daily by traders managing over **\$12b** of assets (mortgage servicing rights and asset-backed securities) to make investment decisions
- Built an internal interview management system (**JS/Python/PostgreSQL**) that delivers **\$100k/yr** of cost savings to the firm
- Implemented **CUDA** in the firm for the first time resulting in 6x faster model training for models that directly manage over **\$18b** of assets
- Extended the **Python Polars** API for a popular internal data analysis package used by the 20+ quantitative researchers
- Migrated over 100mm rows of constantly growing data and its daily management script (in **MSSQL**) to the cloud

Hamburg Commercial Bank ([website](#))

Hamburg, Germany (and remote)

DIGITAL TRANSFORMATION ARCHITECT - DATA SCIENCE

Feb 2020 - Dec 2023

- Reduced IT spend by **\$6mm/yr** as part of the private equity takeover of Hamburg Commercial Bank
- Developed and hosted a bank-wide full-stack loan calculation engine in **R Shiny** which is used for risk management of **\$30b** of assets and replaced parts of the SAP suite to the tune of **\$1.4mm/yr**
- Created a backend in **PostgreSQL** to store all model inputs and outputs for this loan calculation engine, replacing cumbersome monthly processes for the entire Balance Sheet team
- Led development of an ad-hoc risk assessment web app (in **R Shiny**), using the the Ornstein-Uhlenbeck model, to help senior leadership manage collateral and counterparty risk during the never-before-seen 2020 and 2021 container shipping price bubble

SimpleBet

New York, USA

DATA SCIENTIST

Aug 2019 - Jan 2020

- Engineered advanced predictive models using techniques like gradient boosting and logistic regression, focusing on sports analytics based on MLB API data, increasing prediction accuracy by **32%**
- Enhanced team productivity and code quality by establishing robust multi-user git collaboration processes
- Led baseball education sessions to remedy lack of cultural familiarity with baseball among the team, and helped harmonize this newly-gained intuition with pre-existing data science skills

Personal Projects

FlyOnTime ([link](#))

Chapel Hill, NC

CREATOR

Aug 2023 - Present

- FlyOnTime enhances **Google Flights** to show the user (on hover) the probability that a flight will be delayed *before* the user books
- Predictions come from a proprietary model based on ten years of free flight-level data from the Bureau of Transportation Statistics
- Currently has about **100** sticky users and is showing **8%** month-over-month growth

Education

University of Cambridge Department of Applied Mathematics and Theoretical Physics

Cambridge, England

MASTER'S IN COMPUTATIONAL BIOLOGY

Oct 2018 - Aug 2019

- Coursework on mathematical modeling, advanced statistics and optimization for complex scientific problems

University of North Carolina at Chapel Hill

Chapel Hill, NC

BS IN QUANTITATIVE BIOLOGY

Aug 2014 - May 2018

- Wrote a weekly humorous advice column for the campus newspaper, *The Daily Tar Heel* satirizing the UNC student experience

Skills

Python, SQL, C++, JS/TS (and frameworks), Linux, Bloomberg Terminal
English (native), Spanish (fluent), French (passable), 130WPM Typing