Amy Fox, PhD

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Ambitious data scientist with a "can-do" attitude and a history of working in research and start-up environments. Thrives off of problem solving and developing creative solutions. Eager to join and grow with a fast-paced team that has a passion for innovation and values the integration of data science and business acumen to develop data-driven solutions.

KEY SKILLS

- **Programming Languages and Technical Skills**: Python, R, SQL, Snowflake, Git version control
- **Machine Learning:** Regression, Clustering, Dimensionality Reduction, Self-Organizing Maps
- **Business Intelligence Tools and Data Visualization:** AWS Quicksight, ggplot2
- **Business Skills:** Business Process Management Certification, Leadership, Effective Communication

PROFESSIONAL EXPERIENCE

Sabbatical – Independent Travel and Personal Development Apr 2024 – Apr 2025

- Developed adaptability, planning, and problem solving skills during one year sabbatical to travel the world, visiting 26 countries. After spending time away, I am fully ready to inject the same enthusiasm back into my career

Manager, Data Analytics and Risk, Capital One, Houston, TX Jan 2023 – Apr 2024

- Developed a modular interest rate stress-testing tool using Python and SQL to identify high-risk borrowers across all commercial bank segments; created a dynamic dashboard to visualize results and discussed business insights with senior leadership each month to guide risk mitigation strategies
- Designed and implemented a streamlined methodology and logical framework for evaluating new commercial bank deals and distilled key insights into a monthly interactive dashboard to drive reliable, data-driven decisions by senior leadership
- Developed a location-based system of assessing collateral in hurricane-impacted states including converting findings into a sortable, self-service dashboard shared with the underwriting team to enable efficient prioritization and assessment of affected properties
- Led cost optimization efforts through the automation of nine key business management reports which increased efficiency and reduced production time from weeks to hours

Principal Risk Analyst, Data Analytics and Risk, Capital One, Houston, TX Jan 2022 – Jan 2023

- Developed a toolkit for measuring and visualizing recession readiness metrics—such as downgrades, utilization trends, and macroeconomic indicators—leveraging Python, SQL, and QuickSight to enable self-service analytics to commercial banking underwriters and senior leadership
- Optimized scalability and efficiency by identifying redundancies and refining code in 14 business-critical python scripts regularly utilized in monthly and quarterly business reporting to an executive audience
- Conducted ad hoc analyses and data reconciliation on executive risk management reporting

Senior Data Scientist, **Founding Team,** The Neighborhood Score, Houston, TX Dec 2020 – Jan 2022

- Designed and implemented data-driven scoring frameworks to optimize user recommendations, leveraging quiz responses to match individuals with neighborhoods that align with their preferences.

- Mined and standardized publicly available datasets nationwide, ensuring seamless integration and compatibility with the website
- Built and maintained ETL pipelines to load clean, transformed data into our Azure database

Doctoral Candidate, Colorado State University, Fort Collins, CO Aug 2017 – Dec 2021

- Developed an open-source R-based data analysis pipeline for large flow cytometry datasets and multivariate testing, feature engineering millions of cells and reducing data analysis time from weeks to minutes. Code is available open-source at https://github.com/aef1004/cyto-feature_engineering
- Developed a new computational method utilizing Principal Components Analysis and linear models to identify correlations between immune cell populations and metabolites in infectious disease models
- Conducted efficacy testing of candidate tuberculosis and SARS-CoV-2 vaccines in animal models, utilizing statistical analysis (e.g., ANOVA) to assess bacterial load and immune cell presence

Ambassador, CSU Ventures, Fort Collins, CO Aug 2020 – May 2021

- Conducted comprehensive technology assessments of university intellectual property by developing prior art searches, competitive landscape analyses, and market research analyses
- Identified emerging trends, key industry players, and potential market opportunities to evaluate innovation potential and inform strategic decision-making

Data Scientist Consultant, Colorado State University, Fort Collins, CO Aug 2019 – Dec 2019

- Created an analysis pipeline for analyzing nanostring data that reduced analysis time per experiment from 1 week to under 1 minute.
- Performed automated statistical analysis on hundreds of genes per study animal, through testing each gene-mouse group pair for normality, similar variances, and then performing appropriate statistical tests

EDUCATION

Doctor of Philosophy in Microbiology, Immunology, and Pathology Dec 2021
Colorado State University, Fort Collins, CO

Bachelor of Science in Bioengineering May 2017
Rice University, Houston, TX

SELECTED AWARDS AND FELLOWSHIP

2021 22nd Annual CVMBS Research Day, **3rd Place Outstanding Poster Presentation Award**
2020 21st Annual CVMBS Research Day, **2nd Place Outstanding Oral Presentation Award**
2019 National Science Foundation, **Gaussi Fellowship**
2019 International Society for Advancement of Cytometry Conference: **Outstanding Poster Award**
2017 Rice University Bay Area Showcase: **Most Investable Design Award**
2016 Eighth Annual Elevator Pitch Competition: **1st Place**

SELECTED PUBLICATIONS

1. **Fox A**, Dutt T, Karger B, Obregon-Henao A, Anderson B, Henao-Tamayo M. Acquisition of High-Quality Spectral Flow Cytometry Data. *Current Protocols in Cytometry.* 2020; 93(1).
2. **Fox A**, Dutt T, Karger B, Rojas M, Obregon-Henao A, Anderson B, Henao-Tamayo M. Cyto-feature engineering: A pipeline for flow cytometry analysis to uncover immune populations and associations with disease. *Scientific Reports*. 2020; 10.