DANIEL CANTWELL

Software Developer

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EDUCATION

UNC Chapel Hill

B.S. in Mathematics, Minor in Computer Science

August 2015 – May 2019 Chapel Hill, North Carolina

North Carolina School of Science and Math

High School

August 2013 – May 2015 Durham, North Carolina

SKILLS

- Clean, concise, idomatic Python. Tested with powerful tools (ex: property-based testing, design by contract).
- Designing event-driven architectures
- Creating + deploying cloud tech like AWS S3, Lambda, Glue, Cloudwatch, etc.
- Shell/Bash scripting, Git, CI/CD piplines, Latex
- Exploring Functional Programming in Clojure, Haskell, Elm

EXPERIENCES

Software Engineer II

The Vanguard Group

July 2022 – Present Charlotte, North Carolina

- I currently work on automation infrastructure for creating + maintaining generative AI projects at Vanguard.
- I worked extensively on SageBot, an NLP chatbot that allows ML engineers and data scientists to quickly set up production-ready ML projects in SageMaker.
- I built many custom features for use in SageMaker Studio, including an automated pipeline for building + deploying custom Docker images and various cost-saving measures that reduced training/experimentation costs by 80%.

Software Engineer I

The Vanguard Group

Jan 2021 – July 2022 Charlotte, North Carolina

- I worked closely with technical leadership to architect AWS-based solutions for modernizing various reports that audit different types of money movement.
- I maintained and enhanced high-performance Spark jobs.

Math/Computer Science Tutor

UNC Chapel Hill Math Help Center

Sept 2016 – May 2019 Chapel Hill, North Carolina

Expedition Guide

UNC Chapel Hill Outdoor Education Center

Jan 2017 – May 2019 Chapel Hill, North Carolina

ACHIEVEMENTS

- Carolina Covenant Scholar (2015-2019)
- One of the highest performing employees in the Enterprise Data Office (EDO) in 2023
- Recognized for my technical outreach in EDO

SELECTED INTERESTS

Human-Code Interfaces

- Developed RepoVis, a basic but flexible dependency graph tool. My goal was to help new devs understand application flow + resource dependency in large codebases that span multiple repos.
- Developed a plugin for an internal CLI that generates an AWS IAM policy (following least-privilege access) given a script that uses boto3 to manipulate AWS resources.

Machine Learning and Probabilistic Programming

- I enjoyed learning about how to use a PPL to answer business questions given some data, as well as what goes on under the hood.
- I spent some time re-implementing classical learning algorithms in Pytorch.

Applied Category Theory

- The structure and insights offered by category theory in areas like database migration, data structure design, and compositional scientific modeling really fascinate me!

COURSEWORK

- COMP401: Foundations of Programming
- COMP410: Data Structures
- COMP411: Computer Hardware and Design
- COMP550: Algorithms
- MATH547/676: under(graduate) Linear Algebra
- Self Study: Basic probability + statistics, Bayesian methods, probabilistic programming languages
- Functional Programming