DANIEL CANTWELL

Software Development + Math

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EDUCATION

UNC Chapel Hill

B.S. in Mathematics, Minor in Computer Science

August 2015 – May 2019 Chapel Hill, North Carolina

GPA = 3.45/4

North Carolina School of Science and Math

High School

August 2013 – May 2015 Durham, North Carolina

GPA = 4.96/5

SKILLS

- Clean, concise, idomatic Python
- Designing event-driven architectures
- Creating + deploying cloud services like AWS S3, Lambda, Glue, Cloudwatch, etc.
- Shell/Bash scripting, Git, CI/CD piplines, Latex
- Functional Programming in Haskell, Elm

EXPERIENCES

Software Engineer II

The Vanguard Group

July 2022 – Present Charlotte, North Carolina

- I work on SageBot, an NLP chatbot that allows ML engineers and data scientists to quickly set up production-ready ML projects in SageMaker.
- I trained data scientists at Vanguard that migrated to SageMaker from other ML platforms and wrote lots of clear documentation on how to use SageMaker + the bot.

Software Engineer I

The Vanguard Group

Jan 2021 – July 2022 Charlotte, North Carolina

- Architected AWS-based solutions for modernizing various reports that audit different types of money movement.
- Emphasized maintainable and resilient event-driven architectures that support easy debugging **and** deliver maximal value to our business partners.

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
- Dean's List Recipient 2017-2018

SELECTED INTERESTS

Pytorch ML Implementations

- Re-implementing various classical learning algorithms in Pytorch
- Self-study for understanding GNN theory + implementation

Human-Code Interfaces

- Prototyping a Vanguard project called RepoVis, a tool for helping developers understand application flow + resource dependency in large codebases that span multiple repos.
- My current team's project spans some 40+ repos that define various AWS resources. The goal of RepoVis is to ease onboarding for people new to our codebase, as well as enhance + document the team's understanding of the codebase.

Math Plumbing

- 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/grad Linear Algebra
- Self Study: Basic probability + statistics, Bayesian methods, probabilistic programming languages
- Directed Reading Project on TDA
- Directed Reading Project on Lie Algebras and representation theory