CHARLIE GUNN

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Employment

HUDSON RIVER TRADING

Algo Engineering Intern *Summer 2022*

- Developed a user-friendly API that generates and deploys custom Google Apps Script code to manage one's Gmail inbox
- Researched and implemented many optimizations for a command line utility backed by a PostgreSQL database, significantly speeding up common queries

CAPITAL ONE

Software Engineering Intern *Summer 2021*

- Created and deployed the foundation for a general notification system for small businesses using RaaS

LEIDOS AI/ML ACCELERATOR

Software Engineering Intern *Summer 2020*

- Researched xRCA (Extended Rapid Class Augmentation), a progressive learning technique to augment new classes onto a model without using data from old classes
- Developed a novel and general technique for stabilizing xRCA initialization accuracy on few data

LEIDOS

Software Engineering Intern *Summer 2019*

- Researched techniques for fully homomorphic encryption over machine learning models
- Tested and benchmarked homomorphic encryption libraries (SEAL, Palisade, nGraph-HE)

CS 2110: COMPUTER ORGANIZATION & PROGRAMMING

Teaching Assistant *Fall 2020, Spring 2021, & Fall 2021*

- Taught 150 minutes of class per week to 50 students, created autograded assignments, etc.

Projects & Research

MENDAX

Deep Learning Research Project *Fall 2020*

- Trained a set of networks to communicate with eachother, split into adverserial teams of "liars" and "truthtellers" in a situation inspired by Among Us
- **Built with: Pytorch, Numpy**

GEOVERIFY

Research Project *Aug. 2018 – June 2019*

- Haskell library (and CLI) for manipulating and verifying geometry proofs
- Parses and understands simple arithmetic and geometric propositions; supports extension via theorems
- **Built with: Haskell (MTL, Lens, Transformers), PostgreSQL, Django**

Awards

PENNAPPS XX

3rd Place Overall – Best Open Source Contribution – Hacker's Choice *Sept. 2019*

- Developed ImpromPPTX, an automatic real-time presentation generator
- Uses custom-built ML models to generate slides with relevant titles, text summaries, and images
- **Built with: SpaCy, Pytorch, FastText, Django**

VTHACKS

1st Place Overall *Mar. 2019*

- Created Electromotivated, a website that analyzes images of circuits using CV and graph algorithms
- **Built with: OpenCV, Numpy, Scikit Learn, Django**

USA COMPUTING OLYMPIAD (USACO)

Platinum Division *Mar. 2017 – Present*

Education

Georgia Institute of Technology
Class of 2023 – 4.0 GPA

- BS Computer Science
- BS Mathematics

Thomas Jefferson High School for Science and Technology
Graduated 2019

Skills

LANGUAGES

- Python
- C
- Javascript
- Nix
- Haskell
- TeX (I wrote this template)

TECHNOLOGIES

- Pytorch
- Linux (NixOS, Arch)
- Docker
- AWS (EC2, S3, etc.)

MISC

- Chess
- Bananagrams
- Twilight Imperium

Relevant Courses

Deep Learning (Grad Course)
CS 4803-DL – Grade: A

Probability Theory
MATH 3235 – Grade: A

Operating Systems
CS 3210 – Grade: A

Real-time Embedded Systems
CS 4220 – Grade: A

Honors Automota & Complexity Theory
CS 4510X – Grade: A

Design & Analysis of Algorithms
CS 3510 – Grade: A

Intro to Quantum Computing
CS 4803-IQC – Grade: A

Real Analysis 1 & 2
MATH 4317/8 – Grade: A