

CHARLIE GUNN

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Employment

HUDSON RIVER TRADING

Algo Engineering Intern

- In progress

Summer 2022

CAPITAL ONE

Software Engineering Intern

- Created and deployed the foundation for a general notification system for small businesses using RaaS
- **Built with: Python**

Summer 2021

LEIDOS AI/ML ACCELERATOR

Software Engineering Intern

- 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
- **Built with: Pytorch, Numpy, Jupyter, AWS**

Summer 2020

LEIDOS

Software Engineering Intern

- Researched techniques for fully homomorphic encryption over machine learning models
- Tested and benchmarked homomorphic encryption libraries (SEAL, Palisade, nGraph-HE)
- **Built with: Tensorflow, Docker**

Summer 2019

CS 2110: COMPUTER ORGANIZATION & PROGRAMMING

Teaching Assistant

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

Fall 2020, Spring 2021, & Fall 2021

Projects & Research

MENDAX

Deep Learning Research Project

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

Fall 2020

GEOVERIFY

Research Project

- 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**

Aug. 2018 – June 2019

Awards

PENNAPPS XX

3rd Place Overall – Best Open Source Contribution – Hacker’s Choice

- 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**

Sept. 2019

VTHACKS

1st Place Overall

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

Mar. 2019

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

TECHNOLOGIES

- Pytorch
- Linux (Arch, NixOS)
- 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 Automata &
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