

CHARLIE GUNN

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Employment

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

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)
- **Built with:** Tensorflow, Docker

BLACKBOILER

Software Engineering Intern

Summer 2018

- Developed natural language processing solutions to aid automated contract review
- Clustered legal documents into semantic groups using unsupervised machine learning techniques
- **Built with:** SpaCy, Scikit Learn

CS 2110: COMPUTER ORGANIZATION & PROGRAMMING

Teaching Assistant

Fall 2020 – Present

Projects

MENDAX

Deep Learning Research Project

Fall 2020

- Trained a set of networks to communicate with each other, split into adversarial teams of “liars” and “truthtellers” in a situation inspired by Among Us
- Explored the conditions in which networks were able to distinguish “liars” from “truthtellers”
- **Built with:** Pytorch, Numpy

GEOVERIFY

Research Project

Aug. 2018 – June 2019

- Haskell library (and command line interface) for manipulating and verifying geometry proofs
- The library can parse and understand both simple arithmetic and geometric propositions, and supports extension by means of postulates and 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 relevant presentation slides, complete with titles, text summary, and images
- **Built with:** SpaCy, Pytorch, FastText, Django

VTHACKS

1st Place Overall

Mar. 2019

- Created Electromotivated, a website that automatically parses and analyzes pictures of circuits using computer vision 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 2022 – 4.0 GPA

- BS Computer Science
- BS Mathematics

Thomas Jefferson High School
for Science and Technology

Graduated 2019

Skills

LANGUAGES

- Python
- Haskell
- Javascript
- Rust
- C++

TECHNOLOGIES

- Pytorch
- Linux (Ubuntu, Arch)
- Docker
- AWS EC2

MISC

- Chess
- Bananagrams

Relevant Courses

Deep Learning (Grad Course)

CS 4803 – Grade: A

Honors Automata &

Complexity Theory

CS 4510X – In Progress

Operating Systems

CS 3210 – In Progress

Design & Analysis of Algorithms

CS 3510 – Grade: A

Honors Discrete Math for CS

CS 2051 – Grade: A

Probability and Statistics

MATH 3215 – Grade: A

Applied Combinatorics

MATH 3012 – Grade: A

Computer Organization & Programming

CS 2110 – Grade: A