WILLIAM ZHANG

+1(631)839-1228 ◇ williamhyzhang@gmail.com ◇ https://williamhyzhang.github.io/

Passionate and efficient software engineer, researcher, and entrepreneur. Strong experience in both theoretical computer science paradigms and its application to real-world engineering efforts. Driven by curiosity.

SKILLS

Programming Languages	Python, C/C++, JavaScript, Swift
Tools/Frameworks	TensorFlow, PERN Stack, Git, Linux
Focus Areas	Machine Learning, Data Structures and Algorithms, Complexity Theory, Cybersecurity, Verifiable Computation, Backend Development

EXPERIENCE

Software Engineer June 2020 - Present
Clay *Brooklyn, NY*
Series A low-code automation startup

- Interned alongside the core engineering team over summer 2020, building out new applications and features to the platform using the PERN stack.
- Received and accepted an offer for part-time employment through the 2020-2021 academic year, continued full-time during summer 2021.
- Led the shift to develop dynamic generation techniques resulting in extremely efficient creation and organization of integrated third party and internal applications.
- Designed, architected, and implemented integration workflow and authentication security.
- Managed various customer interactions/feature requests with fast turnaround and rapid bug fixing.

Student Researcher May 2020 - Present
MIT Computer Science and Artificial Intelligence Lab *Cambridge, MA*
Research institution

- Pursuing student research under the Computation Structures group at MIT CSAIL, mentored by Yu Xia and led by Dr. Srini Devadas.
- Research focusing on secure interactive arguments and their applications to machine learning. Work towards introducing novel verifiable computation protocols of both theoretical and practical interest.

Instructor September 2019 - Present
SchoolNova *Stony Brook, NY*
STEM education organization

- Teaching assistant in advanced math classes with motivated young students interested in STEM.
- Lead instructor for self-made course on an introduction to machine learning.

Software Engineer November 2020
Ponto *San Francisco, CA*
Cryptocurrency liquidation and wallet provider startup

- Contracted to protoype security and infrastructure for liquidation and wallet services in the Celo blockchain environment.

AWARDS/PROJECTS

Grand Prize Winner December 2019 - February 2020
Google Code-in
International annual open source programming competition

- Worked closely with engineers from Google Brain (Google's deep learning artificial intelligence research team) on TensorFlow, their open-source machine learning platform.
- Made significant contributions to Swift for TensorFlow, TensorFlow Datasets, and TensorFlow Core through pull requests, code review, discussions, and documentation. Implemented new features such as a new dataset API and data visualization library, reported/fixed bugs on GitHub.
- Selected to receive an all-expenses paid trip to Google HQ in California (cancelled due to COVID-19 pandemic).

Founding Team Member April 2020 - June 2020
RGBsec
Cybersecurity CTF team

- Founding member of RGBsec, the number 1 ranked high school competitive cybersecurity CTF team in the United States at the time.
- Participated in CTFs: information security competitions aimed at solving tasks in forensics, cryptography, binary exploitation, web exploitation, and reverse engineering.

LEADERSHIP

Founder May 2020 - Present
Hydra *Cambridge, MA*
AI security for the cloud startup

- Spinoff startup based on research with MIT CSAIL, funded with a $15,000 seed grant from Emegent Ventures.
- Invented two new verifiable computation protocols, published 2x, working towards production use.

President September 2020 - Present
Ward Melville Computer Science
Computer science club

- Organize and head weekly meetings, activities.
- Competitive programming lead: solve CP problems and give lectures on topics.

Machine Learning/AI Lead September 2020 - Present
Mathisify
Non-profit CS outreach program

- Helped create 15,000+ hours of free CS courses, workshops and mentorship used by 13,000+ students in 90+ countries.
- Organized research hackathon for underprivileged youth, solicited $10,000+ funding and sponsorship from the likes of Google, NVIDIA, Clay, etc.

PUBLICATIONS

Hydra: Succinct Fully Pipelineable Interative Arguments of Knowledge May 2021
IACR ePrint Archive
MIT CSAIL

- First author on novel verifiable computation protocols.
- First author on application of protocols to machine learning.
- Pending publication at IEEE International Conference on Trust, Privacy, and Security for Intelligent Systems, and Applications.

Swift for TensorFlow: A Portable, Flexible, Platform for Deep Learning February 2021
Conference on Machine Learning and Systems
Google Brain

- Acknowledged as a contributor to the Swift for TensorFlow platform.

EDUCATION

Diploma, Ward Melville High School — Expected 2022
Relevant Coursework: All Honors + AP, GPA: 105.

Data Structures and Algorithms, Johns Hopkins Center for Talented Youth — Summer 2019
Fundamentals of Computer Science, Johns Hopkins Center for Talented Youth — Summer 2018