

Aiden Cullo

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EDUCATION

SUNY Binghamton

B.S. Computer Science | B.S. Mathematics | B.S. Physics — GPA: 3.85/4

Honors: *summa cum laude*, Upsilon Pi Epsilon

Class of 2020

Binghamton, NY

PUBLICATIONS

1. Samad Hajinazar, Ernesto D. Sandoval, Aiden J. Cullo, and Aleksey N. Kolmogorov. Multitribe evolutionary search for stable cu-pd-ag nanoparticles using neural network models. *Phys. Chem. Chem. Phys.*, 21:8729–8742, 2019

SKILLS

Programming Languages: Python, JavaScript, TypeScript, C++, C, Java, Ruby, SQL, PHP

Frameworks: React, Vue.js, Angular, Node.js, Ruby on Rails, MongoDB, GCP

Tools: macOS, Windows, Linux/Unix, Docker, Git, Emacs, VS Code, IntelliJ, NumPy, PyTorch, pandas

Spoken Languages: English (*native*), Spanish (*fluent*), French (*prof.*), Portuguese (*elem.*)

EXPERIENCE

Software Developer

Herogrow

Apr 2023—Present

- Designed **RESTful API** infrastructure for internal/external server endpoints with **Ruby on Rails**.
- Optimized web controller content delivery 4-fold by integrating turbo frames into resource pipeline.
- Reduced database query time 25% by refactoring **PostgreSQL** schema to streamline common actions.

Software Developer

Tradigro

Dec 2022—Apr 2023

- Modularized **Vue.js** sharing UI for journals, trades, and achievements, reducing duplicate feed traffic by 70%.
- Standardized social media post view across platforms, eliminating 5 incorrect media conversions per profile.
- Devised asynchronous locking algorithm for **Node.js** server to avoid a race condition on 1k batch trade uploads.

Software Developer

SuperCerebro

Aug 2022—Dec 2022

- Developed a puzzle strategy game for a 10,000-person customer base across Latin America and Europe.
- Constructed a multi-platform progressive web app via the **Ionic** SDK and **React** framework.
- Implemented DBMS with **Google Firebase** to store 1TB of credentials, preferences, and history user data.

Research Assistant

SUNY Binghamton

Aug 2018—Nov 2020

- Tuned evolutionary search algorithm for nanocrystal alloy structures in **C** to consistently obtain stabler ground states.
- Achieved 50% speed-up of open-source **MAISE** neural network library via parallelization with **openMP** toolkit.

Research Fellow

California Institute of Technology (Caltech)

Jun 2019—Aug 2019

- Performed scanning tunneling microscopy (STM) of topological defects in semiconductor surface states.
- Cross-examined results of pure and Cr-doped ($(BiSb)_2Te_3$ -bi-layer topological insulator substrates.

Research Intern

Sapienza University of Rome

Jun 2018—Aug 2018

- Constructed a multi-layer convolutional neural network in **Python** to classify particle collisions with 97.5% accuracy.
- Generated 20k training samples based on weakly interacting massive particle (WIMP) theoretical models.

Software Intern

National Aeronautics and Space Administration (NASA)

Jun 2017—Aug 2017

- Built a library in **C++** and **MATLAB** to interpret biases and correlations in 1000+ battery metadata indicators.
- Incorporated uncertainty and loss information into mission-critical decisions for autonomous drone fleets of 100+.

VOLUNTEERING

Coordinator

Annunciation House

Mar 2022—Jun 2022

- Helped refugees, detained by border patrol, reconnect with their families and contact their domestic sponsors.
- Facilitated safe travel to host cities and attendance of mandated court appearances for 2,000+ refugees.

Liaison

Casa Tochan

Jan 2022—Mar 2022

- Aided migrants in finding jobs, renting apartments, and petitioning the government for asylum, residency, citizenship, driver's licenses, working permits, and vaccinations.

Secretary

Tree of Hopes

Oct 2021—Nov 2021

- Coordinated with sponsors, lawyers, police, government officials, and doctors to provide residents with the requisite support and safeguard their civil and informational rights.

Teacher

Parchando Ando

Nov 2022—Mar 2023

- Created and instructed a 12-week comprehensive English course for 30+ students of all ages and levels of education.