

# Owen Oertell

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## EDUCATION

### Cornell University

Ithaca, NY

*B.S. in Computer Science, Electrical Computer Engineering; Minor in Mathematics.*

*Expected Graduation: May 2025*

- **Relevant Coursework:** Introduction to Algorithms, Object Oriented Programming & Data Structures, Advanced Linear Algebra

### Georgia Institute of Technology

Atlanta, GA

*Full Time Dual Enrollment; GPA: 4.0/4.0.*

*Aug 2021 - May 2022*

- **Relevant Coursework:** Linear Algebra, Multivariable Calculus, Differential Equations, Discrete Mathematics, Graduate Level Computational Foundations of Machine Learning

## EXPERIENCE

### Lab Researcher

May 2020 – Present

*Dickson Lab, Georgia Institute of Technology · Part-Time*

*Atlanta, GA*

- Adapted C code from bacterial genome to the human genome for novel copy number variation detection algorithm.
- Reduced memory consumption by 300GB while maintaining speed via parallelization and low-level C programming.
- Assisted in development of efficient blood assay technique for bacterial infection identification.
- Increased data gathering speed by 4x by writing code to use multiple cameras in parallel with single camera port.
- Co-authored low budget blood assay technique paper publication submission in process.
- **Utilities:** C (Serial and Parallelized), OpenMP, OpenACC, Makefiles, OpenCV, Linux, Python, Valgrind

### Head of Engineering, Secretary on Board of Directors

April 2020 – July 2022

*Y STEM and Chess Inc 501(c)(3) · Internship*

*Boise, ID*

- Managed 30 undergraduate and professional SWEs.
- Led development of website: [YStemAndChess.com](http://YStemAndChess.com) to provide free mentoring of underprivileged children from around the world. Helped expand Y STEM and Chess to tutor more than 800 children.
- Interviewed and hired interns and full time developers.
- Engineered and implemented scalable microservice architecture designs to minimize cost.
- Led development of real-time chess pairing and mentoring system.
- Implemented recording storage system allowing parents and students to review lessons.
- **Utilities:** Node.js, PHP, AWS, Angular.js, MongoDB, Docker, Kubernetes

## PROJECTS

### PrepByAI.com (Co-Founder)

June 2021 – May 2022

- Led development of website: [PrepByAI.com](http://PrepByAI.com), a free ACT preparation site.
- Built machine learning model to identify needs and suggest questions to improve performance using term frequency-inverse document frequency and k-means clustering.
- Over 500 regular users and 9,000+ questions answered to date.
- **Utilities:** Flask, PostgreSQL, TensorFlow, React.js, JavaScript, Python

### DataManager (Large Scale Image Anomaly Detection)

March 2021

- Created efficient variational autoencoder to detect anomalies in large image datasets.
- Added Electron.js frontend to create desktop application to apply, detect and confirm or remove anomalous images before deep learning tasks.
- **Utilities:** TensorFlow, React.js, Electron.js, JavaScript, Python

## AWARDS

- Salutatorian of Chamblee High School (Magnet Program)
- 2nd at Technology Student Association National Competition in software development among 500+ submissions for DataManager project.
- Georgia Science and Engineering Fair Award for *Novel Application of Document Distance for CNV Detection*.
- National Merit Scholarship Recipient.
- Presidential Scholar Semi-finalist.
- Top 25 at Technology Student Association National Competition in data science among 500+ submissions for pulsar star detection deep neural network.

## TECHNICAL SKILLS AND INTERESTS

**Languages:** C (OpenACC, OpenMP), C++, C#, Java, JavaScript, Python, Ruby, HTML/CSS, SQL

**Frameworks:** React.js, Angular.js, Electron.js, Node.js, Express.js, .NET core

**Developer Tools:** Jupyter Notebooks, Git, Docker, Kubernetes, VS Code, Amazon AWS, VIM, Makefiles

**Libraries:** Pandas, OpenCV, TensorFlow, Pillow, Numpy, Matplotlib, Valgrind

**Databases:** PostgreSQL, MongoDB

**Interests:** Mathematics (Pure and Applied), Thoretical Machine Learning, Go (board game), Magic: The Gathering, Golf