

# Ari Mirsky

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## EDUCATION

### Cornell University

John McMullen Dean's Scholar

B.S. in Computer Science, In Progress (Anticipated May 2025)

GPA: 4.04/4

Ithaca, NY

Aug. 2021 – Present

### Briarcliff High School

Regents Diploma with Honors and Distinction in Mathematics

GPA: 101.36/100

Briarcliff Manor, NY

Sep. 2017 – June 2021

## EXPERIENCE

### Cornell Autonomous Bicycle

Cornell University

Software Team Lead

Ithaca, NY

May 2023 – Present

- Designed and allocated projects for a team of 15 people
- Managed the integration of the vision, navigation, and controls systems
- Directed the creation of connections between software and hardware on the physical bike

Navigation Subteam Lead

May 2022 – May 2023

- Researched, designed, and implemented reinforcement learning algorithms for obstacle avoidance, including Q-learning
- Researched and designed supervised machine learning algorithm using a random forest approach for determining how densely to sample the state space
- Constructed a future plan for the team to transition from an autonomous bicycle to autonomous drone once autonomous bicycle testing is finished

Navigation Developer

Oct 2021 – May 2022

- Contributed to a repository with 25k+ lines of code
- Worked with a team to create path following and collision avoidance algorithms
- Integrated bicycle hardware with pathing software using ROS

### Teaching Assistant

Cornell University

Aug 2023 – Present

Ithaca, NY

- Held office hours to help students understand the class material
- Graded students' exams and homeworks
- Was a teaching assistant for Discrete Structures for Fall 2023 and Analysis of Algorithms for Spring 2024

### Software Engineer, Amazon

UnifiedAuth Team

May 2023 – Aug 2023

New York, NY

- Utilized AWS managed Grafana to create dashboards for internal team usage and for other customers within Amazon
- Used SQL queries through Amazon's Redshift to process telemetry data
- Created a microservice using EC2 instances alongside S3 buckets that allowed services within Amazon to determine their callers' Transitive Authentication adoption status
- Preprocessed data hourly to maintain low latency responses with up-to-date information

### Programmer Analyst, Niemack Research Group

Cornell University

May 2022 – Jun 2023

Ithaca, NY

- Modernized legacy excel programs into Python
- Created an automated data pipeline from telescope parameters to constraints on cosmological parameters
- Published open source generalizable code for other telescope designs and locations
- Produced simulated maps of the sky using calculated sensitivity data

## PROJECTS

### Discord Bot | Python, Discord.py

June 2021 – July 2021

- Created a discord bot that responded to messages sent in selected discord servers
- The bot asynchronously responded to user input
- Integrated with open source Discord.py

## RELEVANT COURSES

- |                                |                               |                              |
|--------------------------------|-------------------------------|------------------------------|
| • Analysis of Algorithms       | • Foundations of Robotics     | • Discrete Structures        |
| • Reinforcement Learning       | • Computer Graphics           | • Honors Linear Algebra      |
| • Computer Vision              | • Functional Programming      | • Operating Systems          |
| • Computer System Organization | • Object Oriented Programming | • Probability and Statistics |

## TECHNICAL SKILLS

**Languages:** Java, Kotlin, Python, Bash, JavaScript, HTML/CSS, R, OCaml, C, C++, TypeScript, Rust

**Frameworks/Libraries:** Swing, FastAPI, Discord.py, ROS, Gazebo, NumPy, Matplotlib

**Developer Tools:** Git, Visual Studio Code, IntelliJ, Eclipse, BlueJ, Jupyter Notebook, Conda, React