

# Ayush Rautwar

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## EDUCATION

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### University of Michigan - College of Engineering

Ann Arbor, MI

*BSE in Computer Science; GPA: 3.91/4.0*

*Graduation Date: December 2024*

- **Relevant Coursework:** Discrete Mathematics, Data Structures, Probability & Statistics, Complex Systems, Computer Architecture, GPU Programming, Operating Systems, Human Centered Software Design

## EXPERIENCE

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### Citadel Securities

Starting February 2025

*Software Engineer*

*NYC, NY*

### Citadel Securities

June 2024 - August 2024

*Software Engineer Intern*

*NYC, NY*

- Built a pipeline to sanitize, backfill, and analyze enriched corporate bond instrument reference data using Python
- Improved corporate bond data feature extraction and test coverage to broadly increase operational stability

### Roblox

May 2023 - August 2023

*Software Engineer Intern*

*San Mateo, CA*

- Built an automated CI debugger tool that detects, notifies, and reverts for breaking changes across the game engine
- Implemented Elasticsearch-based predictive autoscaling for build agents to reduce queue times and cloud costs
- In total, reduced build costs by over \$150,000 per year and reduced average build times across game engine by 8%

### Amazon

September 2022 - December 2022

*Software Development Engineer Intern*

*Seattle, WA*

- Built new internal service that aggregates downstream customer data for customer service agents using AWS Fargate infrastructure, Java-based Amazon GraphQL resolvers, React frontend components, and Nightwatch JS tests
- Worked with advanced internal build tools, documentation, deployment pipelines, and infrastructure

### Capital One

June 2022 - August 2022

*Software Engineer Intern*

*McLean, VA*

- Built serverless sandbox REST APIs in Python using AWS services like Lambda, ElastiCache, and DynamoDB
- Implemented an MVP for a cached sandbox, where mock states from previous API calls are stored in Redis

### Surmount AI

August 2021 - March 2024

*Co-Founder and Chief Technology Officer*

*Miami, FL*

- Raised over \$1.2M in seed round venture capital and participated in the Techstars Anywhere startup accelerator
- Manage AWS-based backend to create automated trading processes on-demand and execute trades real-time using Flask, Django, and NodeJS along with MongoDB and Postgres SQL deployed on AWS EC2, Lambda, and RDS

## PROJECTS

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### Trading Toolkit | *Python, Tensorflow, Javascript, C++, MongoDB*

June 2020 - Present

- Developed a closed-source, statistics-based stock trading toolkit featuring a genetic programming-based strategy creator, timeseries classification-based portfolio optimizer, and deep-q-network trading bot
- Created automated data cleaning and processing pipelines to gather sentiment, price action, global news, and more

### Efficient RL-based Othello | *Python, Tensorflow, NumPy*

Aug. 2020 - June 2021

- Implemented a general-purpose algorithm with a tree search and policy/value networks trained through self-play
- Used multithreading and memory management to maximize concurrent resource usage and optimize training

### CodingClash | *Python, Django, HTML, CSS, AWS S3, Heroku, MySQL*

June 2020 - Sept. 2020

- Developed a virtual battle-based competition from scratch using Django, custom frontend, and containers
- Secured sponsors and hosted a successful nationwide competition with over 60 participating collegiate teams

## TECHNICAL SKILLS

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**Languages:** Python, C++, Java, JavaScript, HTML/CSS, MATLAB, Rust, Golang, Bash

**Other:** Git, Flask, Django, Tensorflow, Docker, AWS infrastructure, React, SQL, Node.js