

# Ahmed Abdelrehim

Clinton, NY 13323 • +1 (315) 271-1611 • [aabdelre.ahmed@gmail.com](mailto:aabdelre.ahmed@gmail.com) • [LinkedIn](#) • [GitHub](#)

## EDUCATION

**Hamilton College, BA | Majors:** Computer Science, Mathematics | **GPA:** 3.86 **Clinton, NY | December 2024**  
**The University of Manchester, Year Abroad | Grade:** First Class **Manchester, UK**  
**Honors/Awards:** Dean's List (All semesters) – ICPC NENA Regional 1st Undergraduate Team (March 2022)  
**Relevant Coursework:** Programming Design Principles, Algorithms and Data Structures, Computer Organization, Artificial Intelligence, Cognitive Robotics, Visual Computing, Linear Algebra, Database Systems, Web Development

## TECHNICAL SKILLS

**Programming:** Python, C/C++, Clojure, SQL, HTML, JavaScript, TypeScript, CSS  
**Tools, Libraries, & Frameworks:** Git, React, TensorFlow, Docker, Kubernetes (K8s), Prometheus, ArcGIS, Grafana, Numpy, OpenCV, Matplotlib, Pygame, Node.js, Three.js, Linux, AWS, Figma, MongoDB, Selenium

## WORK EXPERIENCE

**Juniper Networks – Software Engineer Intern | Westford, MA** **May 2024 – August 2024**

- Spearheaded the migration of Address Pool Manager (APM) monitoring to cloud using Prometheus clients, eventually contributing to the overall reduction of a management pod's size to 61MB (~18% of its original size)
- Configured a Prometheus Helm chart to scrape a K8s cluster stats and APM's micro-services endpoints created by implementing parallel processes, adding instrumentation code for various metrics, and metrics gRPC messages
- Built dashboards in Grafana to view metrics scraped by Prometheus as well as values stored in a Redis DB

**Hamilton College R&ID Team – Software Developer | Clinton, NY** **June 2023 – January 2024**

- Integrated 4 AWS Lambda functions, Amazon DynamoDB, and Amazon S3 buckets for an inventory tracking app
- Restructured RESTful API endpoints in Django, enhancing response times by 14% for a seamless user experience
- Created a comprehensive test suite with 15 PyTest unit tests, increasing code coverage by ~10%
- Revamped UIs of digital archives using ReactJS by converting Figma designs into 7 distinct web pages
- Automated data collection via Python scripts to scrape 5+ websites, populating MySQL database with 2,000+ objects

**Hamilton College Computer Science Department – ML Research Assistant | Clinton, NY** **May 2022 – August 2022**

- Fine-tuned a machine learning model in a multi-threaded Genetic Programming system, developed in Clojure, for code synthesis, reducing the required number of training cases for successful modeling by ~11%
- Discovered inconsistent behaviors and fixed bugs in evaluation functions for ~20 benchmark tests, resulting in stable code and ~10% increase in the success rate of system runs
- Wrote Python scripts to automate experiment execution on an HPC cluster and results visualization in RStudio

## PROJECTS

**Robot Vision – ML Engineer**

- Architected and optimized a TensorFlow-based ML model for object detection on NAO and Pepper robots, utilizing transfer learning and advanced optimization techniques, like data augmentation and quantization using Numpy

**College Market – Full Stack Developer**

- Architecting an E-commerce platform with Admin dashboard in TypeScript for college students utilizing Stripe to process payments, ReactJS and Tailwind CSS for a responsive UI, and Next.js, Prisma, and MongoDB for the back-end

## LEADERSHIP

**Hamilton College Coding Club – Vice President | Clinton, NY** **August 2021 – Present**

- Devising problem sets from Codeforces and LeetCode for ~15 students to practice competitive programming during weekly 2-hour sessions, preparing them for hackathons, coding competitions, and technical interviews
- Teamed with 2 to fine-tune a GPT-4 model on 5 datasets, containing 8000+ language tokens, for poetry generation

## AFFILIATIONS & ACTIVITIES

**Member | CodePath | Remote** **June 2023 – Present**

**Member | Soccer Club | Hamilton College** **August 2021 – Present**

**Interests:** Deep Learning, Cloud-Based Software Development, Hiking and Landscape Photography