

COLE AUGUSTA

Software Engineer / Rensselaer Polytechnic Institute

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EDUCATION

Rensselaer Polytechnic Institute (RPI)

Troy, New York

Bachelor of Science in Computer Science

Aug 2022 – May 2026

- **Courses:** Algorithms, Intro to Artificial Intelligence, Logic-Based Artificial Intelligence, Cognitive Modeling, Knowledge-Graph Powered AI, Operating Systems, Data Structures, Computer Organization, Principles of Software, Foundations of Computer Science, RCOS (Open Source Programming), Functional Programming Languages, Numerical Computing

PROJECTS

Multithreaded Client-Server Code Repository

Full-Stack Developer, Encryption and API

Aug 2025 – Nov 2025

- A multi-threaded client-server code repository app with both command line client (CLI) and client with the Qt GUI
- Features encrypted passwords/files, concurrent clients, Qt GUI, path traversal security and custom TCP protocol
- Can run on Windows/Linux, Deployed on an AWS EC2 instance running Amazon Linux 2023
- Primary Full-Stack developer using C++, socketed TCP connections, Qt library for GUI, shell testing

Common Sense QA AI Model

Back-End Developer, AI Model Architecture

Jun 2025 – Aug 2025

- Trained a GNN (GCN and GAT) on a Commonsense Knowledge Graph to answer user common sense questions
- Built Pytorch Geometric graph to construct portion of ConceptNet 5.1 as source knowledge graph
- GCN features multi-layer architecture training on a link prediction task over the graph
- Semantic profiles of input nodes help the model train and learn language embeddings to answer the user
- Implements a user QA system in-console, prompting the model to answer common sense questions
- Primary Back-End developer using Python/Pytorch Geometric to assemble graph/QA system, Pytorch to train

Gradient-Descent Optimization AI Model for OPTCG

Back-End Developer, AI Model Architecture

Aug 2025 – Dec 2025

- Pytorch-based optimization model that generates optimal decklists for the One Piece Trading Card Game
- Uses gradient descent with Gumbel-Softmax, uses multi-objective loss to handle all data entries per card
- Primary Back-end developer using Python for card analysis, and Pytorch for model development

Machine Learning Hype Classifier for Spotify

Back-end Project Developer

Jan 2024 – May 2024

- Spotify AI Hype Classifier is a PyTorch-based binary classification model that predicts if song is “hype” or not
- Makes use of Spotify’s audio features as trained features, trained on Spotify metadata April 2019 and prior
- Primary Back-end developer and tester, using Python/PyTorch/Pandas for model architecture and development

Flip - Machine Learning Computer Vision Model for Hand Tracking

Full-Stack Developer, Computer Vision

May 2024 – Aug 2024

- Computer vision application to use hand movement tracking software to “flip” through eBooks and pdfs
- Implemented MediaPipe machine learning recognition models for hand movement and gesture tracking with cv2
- Back-end developer working in team for Flip, using Python, MediaPipe hand tracking models, and OpenCV for development

LEADERSHIP AND ACTIVITIES

Rensselaer Center for Open Source (RCOS)

Troy, New York

Project Leader, Open Source Contributor

Jan 2022 – Present

- RCOS is a center for RPI students to create/contribute to real-world open source technologies
- Some projects spawned by industry leaders such as IBM, Western Digital, and Open Energy
- Led/contributed to multiple open source projects over multiple years of involvement

SKILLS, LANGUAGES, INTERESTS

- **Languages:** Python, C, C++, C#, Rust, Java, JavaScript, Ruby, Golang, Haskell, Erlang
- **Frameworks/AI:** PyTorch, TensorFlow, OpenCV, React, Node.js, Agile, MongoDB
- **Web Development:** Flask, HTML, CSS, PHP, PyScript, TypeScript, .NET