

Andrew Goldberg

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EDUCATION

Binghamton University, State University of New York, Thomas J. Watson College of Engineering and Applied Science

Master of Science in Computer Science, Artificial Intelligence Track

Expected May 2027

Relevant Coursework: Machine Learning, Systems Programming, Design and Analysis of Algorithms

Polytechnic Institute, State University of New York, College of Engineering

Bachelor of Science in Computer Science, Minor in Cybersecurity

May 2025

Relevant Coursework: Artificial Intelligence, Computer Vision, Operating Systems

TECHNICAL SKILLS

Skills: Embedded Software, Systems Programming, Deep Learning

Languages: C, C++, CUDA C++, Python, Java, Bash, JavaScript

Libraries: Keras, TensorRT, CUDA, TensorFlow, PyTorch, NumPy, OpenCV, ONNX, Gymnasium, PyGame, GTK

Tools: Git, GDB, Makefile, Valgrind, Tmux, Vim

Operating Systems: Linux (Arch, Kali, NixOS, Debian), Windows

PROFESSIONAL EXPERIENCE

Engineered Signals Inc., Summer Software Engineer Intern | Syracuse, New York

May 2024 – August 2024

- Developed an inference pipeline for a siamese neural network system using TensorRT, CUDA C++ to process real-time streams
- Implemented a vector database to store and search for vector embeddings in CUDA C++ to retrieve target
- Added shared GPU memory buffer functionality to reduce excessive host/device memory copies when transferring data between system processes using CUDA C++, and UNIX system calls

Engineered Signals Inc., Summer Software Engineer Intern | Syracuse, New York

May 2023 – August 2023

- Created a full YOLOv8 object detection system including data pre-processing with C and Python, training via Keras, and deployment using CUDA C++ and TensorRT on a Nvidia Orin AGX
- Optimized CUDA kernels for MaxPool, BatchNorm, and Split neural network layers to properly utilize the GPU architecture
- Collaborated closely with senior engineers to roadmap and prioritize future tasks

Engineered Signals Inc., Summer Software Engineer Intern | Syracuse, New York

May 2022 – August 2022

- Maintained, bug-fixed, and added UI features to GTK-based GUI applications in C
- Improved pre-processing and detection stages for a YOLOv3 object detection system using TensorFlow
- Debugged and developed backend modules performing file I/O tasks

PROJECT EXPERIENCE

ScrabbleCV, Undergraduate Capstone Project, <https://andrewgoldberg.com/posts/scrabblecv>

January 2025 – June 2025

Technologies: Python, OpenCV, PyTorch, Keras, Java, Android, Android Studio

- Android app to simplify scoring of Scrabble games by pointing a phone camera at a board, using computer vision and neural networks, developed using Android Studio, Java and Python
- Created collection and pre-processing pipelines for training data, and trained YOLOv10 object detection networks and convolutional neural network for classification using Keras, PyTorch, OpenCV, Python
- Designed Android application and implemented, profiled, and optimized on-device inference of neural networks

LLMan, Independent Project, github.com/wrdna/llmanpages/

September 2024 – November 2024

Technologies: Python, Transformers, Huggingface

- Fine-tuned a T5 sequence to sequence transformer model on a self-made dataset of linux man pages
- Scraped man pages from Linux system and created a dataset hosted on [kaggle.com/datasets/boldgerg/linux-man-pages/](https://www.kaggle.com/datasets/boldgerg/linux-man-pages/)

RL-Pacman, Independent Project, github.com/wrdna/rl-pacman/

March 2023 – April 2024

Technologies: Python, PyGame, Gymnasium, PyTorch

- Implemented reinforcement learning to play Pacman using Deep Q Learning, through Python, PyGame, and Gymnasium
- Converted PyGame Pacman game to a trainable Gymnasium environment

RESEARCH EXPERIENCE

SUNY Polytechnic Institute, Undergraduate Research Assistant | Utica, New York

August 2024 – December 2024

Technologies: Python, PyTorch, Keras

- Researched unsupervised machine learning architectures for zero-shot anomaly detection on electricity theft time-series data
- Implemented an autoencoder-classifier network, first training and autoencoder, then training a classifier and generating anomalous data by adding gaussian noise to original training data

LEADERSHIP EXPERIENCE

SUNY Polytechnic Institute, Vice President of Ski Club | Utica, New York

August 2023 – May 2025

Jewish Community Center of Syracuse, Head Counselor

June 2020 – August 2022

- Managed and led 35+ counselors and 150+ campers