

Andrew Goldberg

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EDUCATION

Binghamton University, State University of New York, Thomas J. Watson College of Engineering and Applied Science <i>Master of Science in Computer Science, Artificial Intelligence Track</i>	<i>Expected May 2027</i>
Polytechnic Institute, State University of New York, College of Engineering <i>Bachelor of Science in Computer Science, Minor in Cybersecurity</i>	<i>May 2025</i>

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	<i>May 2024 – August 2024</i>
• 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	<i>May 2023 – August 2023</i>
• 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	<i>May 2022 – August 2022</i>
• 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://andrew.gold/berg/posts/scrabblecv	<i>January 2025 – June 2025</i>
<i>Technologies: Python, OpenCV, PyTorch, Keras, Java, Android, Android Studio</i>	
• 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/	<i>September 2024 – November 2024</i>
<i>Technologies: Python, Transformers, Huggingface</i>	
• 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/	
RL-Pacman, Independent Project, github.com/wrdna/rl-pacman/	<i>March 2023 – April 2024</i>
<i>Technologies: Python, PyGame, Gymnasium, PyTorch</i>	
• 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	<i>August 2024 – December 2024</i>
<i>Technologies: Python, PyTorch, Keras</i>	
• 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	<i>August 2023 – May 2025</i>
<i>Jewish Community Center of Syracuse, Head Counselor</i>	
• Managed and led 35+ counselors and 150+ campers	<i>June 2020 – August 2022</i>