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Education

- **Worcester Polytechnic Institute** — Worcester, MA
  M.Sc. Computer Science — *May 2021*
  - Coursework: Deep Learning, Machine Learning, Computer Vision, Artificial Intelligence, Cryptography, Computer Architecture, Algorithm Design & Analysis, Theory of Computing, and Computer Networks
- **Worcester Polytechnic Institute** — Worcester, MA
  B.Sc. Computer Science Cum Laude — *May 2020*
  - Coursework: Software Engineering, Operating Systems, Systems Programming, Object-Oriented Design, Databases, Machine Organization & Assembly, etc.

Projects

- **Learning Deep Social Interactions to Identify Positive Climate** — Worcester, MA
  M.Sc. Thesis — *May 2020 - May 2021*
  - Applied Deep Learning to affective computing for automated classroom observation evaluation
  - Designed graph convolution architecture to apply on social network representations of the scene for capturing CLASS details associated with classroom positive climate
  - Constructed pipeline for assembling network representation of social scenes to achieve performance difference demonstrated in simulation
  - Fine-tuned state of the art computer vision embedding networks for participant tracking on limited classroom data in a privacy conscious manner
- **Enhanced Residual Networks for Context-based Image Outpainting** — Worcester, MA
  Team Project — *January 2020 - May 2020*
  - Modified generative networks with residual pathways and conjoined local and global discriminators to improve on localized feature consistency in image outpainting task on Places365-Standard
  - Published findings and code demonstrating qualitative improvements in internal consistency and more efficiently meeting state of the art performance
- **Automated Corrosion Assessment and Data Collection** — Cape Canaveral, FL
  U.S. Army Research Lab Collaboration — *January 2020 - May 2020*
  - Developed iOS application for efficient on-site data collection, editing, and viewing
  - Deployed RESTful API with support for multi-dimensional data submissions, user account registration and authentication, visualization tools, and download endpoints via web interface
  - Prototyped CNN and SVM classification models for remote corrosion rating per ASTM D1654
- **Augmented Reality for Improving Human-Swarm Interaction** — Worcester, MA
  B.Sc. Capstone Project — *August 2019 - March 2020*
  - Developed ARGoS-based swarm control system on the Magic Leap headset with mixed-modality control options, combining gesture and voice recognition
  - Combined control system with visualization layer to enable easy swarm-wide debugging
  - Published findings, including an outlined user study plan for evaluating methods against existing tablet-based system

- **Forgery Recognition Through Handwriting Style Emulation** Worcester, MA
  Team Project *August 2019 - December 2019*
  - Analysed state-of-the-art machine learning algorithms for handwriting style extraction and synthesis
  - Designed reinforced GAN for synthesis and Siamese network for forgery generation and evaluation
- **Chess Piece Image Classification** Worcester, MA
  Team Project *August 2019 - December 2019*
  - Used data generation techniques to build robust dataset coverage of objects
  - Implemented CNN using Keras and evaluated multiple computer vision pre-processing techniques
  - Achieved 94% classification accuracy while maintaining invariance to rotation, scale, translation, etc.
- **Brigham & Women's Hospital Kiosk** Worcester, MA
  Assistant Lead Software Engineer *January 2018 - May 2018*
  - Designed, developed, and tested pathfinding kiosk software as part of an Agile team
  - Conducted market research through interviews and surveys for usage patterns and requirements
  - Created process maps and diagrams based on business architecture solutions using case diagrams, activity diagrams, and UML flowcharts

Work Experience

- **Worcester Polytechnic Institute** Worcester, MA
  Teacher's Assistant *August 2020 - May 2021*
  - Assisted with the teaching of CS 541 Deep Learning and CS 4518 Mobile & Ubiquitous Computing
- **Worcester Polytechnic Institute** Worcester, MA
  Research Assistant *May 2020 - August 2020*
  - Collaborated with Professor Whitehill to proof tracking-based CLASS prediction models in simulation
- **Proofpoint** San Francisco, CA
  Software Engineer Intern *June 2019 - August 2019*
  - Developed CLI for deployment of a Docker-based testing environment to improve and abstract all individual testing cases
  - Automated product backend upgrade testing jobs in Jenkins
- **Cloudflare** San Francisco, CA
  Operations Intern *June 2018 - August 2018*
  - Designed system for identifying, scoring, and generating optimal sales leads using internal contact data supplemented with additional information scraped from networking platforms
  - Developed scripts used to periodically evaluate client's site status information with 100x efficiency

Skills

Languages: Python, Java, Go, C, C++, C#, Bash, MATLAB, R, SQL, Lisp, LaTeX

Software: Linux, Git, Jupyter Notebook, Docker, Kubernetes, CUDA, Make, CMake, GDB, VirtualBox, Unity, Jenkins, Gradle, TravisCI, Valgrind, Wireshark, Jira, Trello

Frameworks: NumPy, PyTorch, TensorFlow, Keras, SciKit, SciPy, OpenCV, Pandas, Matplotlib

Compute Services: Google Cloud Platform, Amazon Web Services, SLURM-based Linux clusters

Certifications: Human Subjects in Social & Behavioral Research by CITI

Topics: Deep Learning, Computer Vision, Geometric Learning, Graph Neural Networks, Embeddings, Timeseries Processing, Reinforcement Learning, Distributed Robotics Systems, Human-Swarm Interaction, State Estimation

Awards: Dean's List: Fall 2017, Fall 2018, Spring 2020