Jerrick Liu

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EDUCATION

University of Illinois at Urbana-Champaign Champaign, IL | Cumulative GPA: 4.0

Bachelor of Science in Computer Science

Expected graduation in 2023

Course Assistant (CA): Software Design Studio (SP 2021 CS 126) -> Code moderator for 5 students.

Relevant Coursework: Honors Data Structures; Machine Learning; Intro to Algorithms; Software Design Studio

WORK EXPERIENCE

NVIDIA | Incoming Deep Learning Library Intern Santa Clara, CA | May '22 – Aug '22

- Apart of the cuDNN fuser team working with internal cuda kernel developers to develop high performance cuda kernel generators to generate state of the art fusion kernels running on tensor cores.

AIR FORCE RESEARCH LABORATORY | Research Intern Riverside, OH | Dec '20 – Aug '21

- Performed computer vision techniques such as homographies on a data set consisting of electro-optical (EO) and synthetic aperture radar (SAR) images to align and create a dataset.
- Conducted numerous experiments using CycleGAN to generate EO images from original SAR images to better perform image registration.
- Investigated approaches to domain adaptation to train a classifier adapted to our dataset.

AUTONOMY TECHNOLOGY RESEARCH CENTER | Intern Dayton, OH | May '21 – Aug '21

- Created a reinforcement learning framework for natural language processing tasks through a robust custom OpenAI Gym environment.
- Integrated Mattermost and Google Drive API to query Mattermost and the group's Google Drive for videos.
- Applied Vosk to transcribe meeting videos and performed topic modeling and keyword extraction on the video transcripts with LDA and RAKE and compared to Mattermost channel topics and select one to post a meeting link in.

AIR FORCE RESEARCH LABORATORY | Research Intern Riverside, OH | May '20 – Aug '20

- Utilized MineRL, a reinforcement learning environment based in Minecraft and OpenAI Gym to train agents through imitation and deep reinforcement learning to achieve certain objectives in the game.
- Used TensorFlow and reinforcement learning algorithms such as proximal policy optimization (PPO) to maximize the rate at which agents learn to play Minecraft and to understand how A.I. agents do in long-term planning .
- Incorporated Docker, writing a docker file for my code, pushing it to Docker Hub, and gained experience packaging software and deploying to other machines and servers.

AIR FORCE RESEARCH LABORATORY | Research Intern Riverside, OH | May '19 – Aug '19

- Researched various ways to improve image classification in drones on military ground vehicles.
- Implemented Gradient Weighted Class Activation Mapping (Grad-CAM), an explainable A.I. technique, to visualize layers of neural networks and presented findings to senior Air Force staff, researchers, and fellow interns.

PROJECTS

INTUITEACH Node JS, Javascript, React JS, MongoDB

IntuiTeach is a web app paired with Zoom that allows teachers to write questions about a certain lecture they are going to have and as a video lecture progresses, the teacher is able to pose live questions throughout the call. IntuiTeach also promotes online engagement of younger learners with our reward system.

PAC-MAN C++, Cinder

A C++ and Cinder implementation of the game Pac-man.

PUBLICATIONS

[1] J. Liu, N. Inkawhich, O. Nina, and R. Timofte. NTIRE 2021 Multi-Modal Aerial View Object Classification Challenge. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*, pages 588–595, June 2021.