

William Dreese

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Objective

To obtain a full-time position for after Spring 2020 graduation that allows me to continue exploring Machine Learning and Data Science, in either a software development or research environment.

Skills & Abilities

Passionate about building fast and scalable applications with complex, compute-intensive backends

Experienced in Python, C/C++, CUDA, Bash, HTML/CSS

Frameworks/Tools used TensorFlow, PyTorch, OpenCV, OpenMP, Kubernetes, Git, Linux, Flask, Docker

Experience

Machine Learning Intern, Western Digital

May 2019 - Aug. 2019

- Built a deep learning application to analyze microstructures for WD's Hard Drive Materials team
- Reported initial tests with WD's ML Accelerator card that revealed key flaws in our partner's software
- Designed performance benchmarks to compare surveillance packages to aide in client decision making

Research Assistant, Intelligent Information Systems (PSU)

Aug. 2018 - Current

- Created datasets by extracting values along the JPEG encode and decode process using OpenCV
- Implemented various pushdown automata in PyTorch using different recurrent networks
- Worked with advisor to help create an optimal model for increasing the quality of compressed images

Education

Pennsylvania State University, University Park PA

Graduating May 2020

B.S. Computer Science

Coursework includes Computer Vision, Concurrent Programming, Systems Programming, Statistics

Projects

HAMR Microstructure Analyzer

Python, Flask, TensorFlow

- Worked with a domain expert to develop an encoder model for 4500% quicker grain segmentation
- Designed scalable web app to allow ease of model uploading and collecting submitted data for training
- Application deployed with Docker and Kubernetes on Western Digital's internal network

tSNE-CUDA

C++, CUDA

- Implemented the t-SNE algorithm with CUDA for a 400% average speed up over baseline CPU version
- Application designed for researchers on PSU's ACI-ICS research cloud for large dataset visualizations

Leadership

Events Coordinator, Student Philanthropy Network

May 2019 - Current

- Organize and oversee events for SPN and the Penn State 2020 Class Gift Campaign

Philanthropy Chair, Phi Gamma Delta

Aug. 2016 - Dec. 2018

- Promoted and executed multiple philanthropy events totaling \$11k in donations & over 1,000 attendees

Technology Chair, Microfinance Initiative

Aug. 2018 - Current

- Manage the organization's web page, evaluate microloan proposals for small business