Austin Okray

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Education

University at Buffalo — Buffalo, NY
Master of Science in Data Science — *Aug. 2020 – Dec. 2021*

University of Wyoming — Laramie, WY
Bachelor of Science in Computer Science, Minors in Math and Stats — *Aug. 2014 – May 2020*

Work Experience

CACI International Inc. Internal Research and Development — Denver, CO
Data Scientist T2 — *January 2022 – Present*

- Used PyTorch and Torchvision to implement new and use existing Computer Vision (CV) models, in both the classification and object detection problem settings
- Worked independently and in teams to perform applied research machine learning and statistics, including notably:
  - Statistical Significance Testing to provide evidence of which deep learning model is best between a set of models
  - Detecting out-of-distribution instances (synthetic and natural) in CV and NLP domains
  - Researching and writing a whitepaper evaluating the landscape of adversarial AI, and the relevant risks posed
  - Working to reduce bias in deep learning settings via sampling, loss function replacement, and dataset augmentation

Teton Simulation Software — Laramie, WY
Machine Learning/Optimization and Software Development Intern — *October 2019 – August 2020*

- Utilizing and developing machine learning methods and optimization methods with Python related to optimization of 3D printed parts
- Maintaining and developing software in Python critical to the infrastructure of the optimization

University of Wyoming Computer Science Department — Laramie, WY
Undergraduate Research Assistant — *May 2018 – Jan. 2020*

- Researching social bias reduction in machine learning models, topics include: feature selection and kernel methods for bias reduction
- Attended conferences, presented original works, other academic papers, progress, and newly researched algorithms
- Implemented algorithms from academic papers and textbooks

Teaching Assistant — *Sep. 2019 – Dec. 2019*

- Worked with Dr. Chao Lan in COSC4550: Introduction to Artificial Intelligence to grade student work, give tutorial lectures, and answer questions on homework and concepts

Publications

- A. Okray, H. Hu, C. Lan. Fair Kernel Regression via Fair Feature Embedding in Kernel Space, International Conference on Tools in Artificial Intelligence, 2019.
- Z. Wang, S. Muknahallipatna, M. Fan, A. Okray, C. Lan. Music Classification using an Improved CRNN with Multi-Directional Spatial Dependencies in Both Time and Frequency Dimensions, International Joint Conference on Neural Networks 2019.

Projects

Fairness for All | *Python, Flask, Javascript, PostgreSQL* — Sep. 2019 – Present

- Allows users to learn about fair machine learning interactively
- Developed this full-stack web application using Flask and Postgres as the back end
- Users choose features to include in a model's training, the model trains, then the results are stored and displayed to the user. Stored results in the database can be accessed for fast reference later.

Technical Skills and Certificates

Languages (in order of experience): Python, SQL, R, JavaScript, HTML/CSS, C/C++
Libraries: NumPy, PyTorch, Torchvision, Matplotlib, Seaborn, scikit-learn
Security Clearance: TS/SCI