Benjamin D. Etheredge

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Education		
	Master of Science: Computer Science	Atlanta, GA
	Georgia Institute of Technology	Aug 2018 - Present (May 2022)
	Coursework: Machine Learning, Artificial Intelligence, High-Performance Computing, AI Ethics, Algorithms	
	Bachelor of Science: Computer Science	Florence, AL
	University of North Alabama	Aug 2011 - May 2016

Experience

Senior Software Engineer, Trideum Corporation — Aug 2021 - Present
- Implementing and integrating software systems developed by University teams
- Providing insight and guidance on AI/ML for various teams and projects

Research Engineer, Auburn University/Davidson Technologies — Jul 2020 - Aug 2021
- Worked with domain experts to explore applicability of ML to various domains
- Researched, selected, and deployed relevant MLOps tools to fit team and customer needs
- Provided insight and guidance on AI/ML for various teams and projects

AI/ML Software Engineer, Modern Technology Solutions, Inc**.** — Apr 2019 - Jul 2020
- Provided Army customer with information and updates on emerging AI/ML technologies
- Researched applications and concerns of AI in the domain of airworthiness

Software Engineer, Raytheon — Nov 2016 - Apr 2019
- Developed multiple new features for a command system using C++, test-driven development, and scrum
- Served as the team's code base expert at the test range for the command system
- Led independent research and development effort into applications of ML to custom compression
- Led effort to optimize CUDA application resulting in a 6x speedup over previous version.

Software Developer, IPWatch — Oct 2014 - Nov 2016
- Worked and managed projects using Python, MySQL, HTML, CSS, JavaScript, and PHP

Featured Skills

Primary Languages: Python, C++/C

ML Libraries/Tools: Tensorflow/Keras, PyTorch, numpy, pandas, scikit-learn, MLflow, hyperopt, OpenAI Gym, DVC, Kubeflow, Spark, D3, CUDA, Docker, Optuna, Kedro

Software Development Tools: Vim, tcsh/bash, Unix tools, Docker, VS Code, Pycharm, Git

Featured Independent Projects

NASA Contract Consulting
Pytorch, Hugging Face, FastAPI, Docker, GitHub Actions, MLflow, DVC, Streamlit
Developed NLP project for a NASA R&D contract which included metrics/artifact tracking, scalable API, user-friendly dashboard, and GitOps to deploy and package all services.

Siamese Network Experiments (github) (PyPI helper library) (kubeflow components)
Tensorflow/Keras, DVC, Python, MLflow, Streamlit, Kubeflow, PyPI, Docker
Developed siamese model building code for one-shot pet breed classification and pet image encoding

MLP-Mixer Keras Implementation (paper) (github) (PyPI)
Tensorflow/Keras, PyPI
Implemented MLP-Mixer paper in Keras and published as Python package

Pokegen (github) (actions)
PyTorch, DVC, Optuna, Github Actions, Python, Traefik, MySQL, Docker, Streamlit
Exploring generative models and effectiveness of GitOps for ML through pokemon generation

Reinforcement Learning Experiments
Manual Deep-Q **(link)** *Tensorflow/Keras, Numpy, OpenAI Gym, Atari, Python, MLflow*
Implemented variants of Deep-Q in Tensorflow 1 graphs that consistently solves Atari games
Pokemon Battler *Pytorch, poke-env, OpenAI Gym, Python, wandb*
Leveraged PPO algorithm in stable-baselines-3 to train a battling agent
Simple Deep Racer **(AIcrowd) (wandb)** *Pytorch, Stable Baselines 3, OpenAI Gym, Python, wandb, Docker*
Competing in AIcrowd simplified DeepRacer competition placing 6th currently

Homelab Management
Virtualization, Docker, Docker Registry, MLflow, Unraid, Hardware, Kubernetes, Kubeflow, Nginx, MinIO, Let's Encrypt, MariaDB, VS Code Server, MySQL, Rancher, High-Speed Networking, Plex, Traefik
Building and maintaining multiple compute systems for various applications

HSV-AI Interest Group (link)
Co-Leader and recurring presenter at weekly, locally founded, artificial intelligence interest group