Seth Briney – Machine Learning Engineer	
Email:	SethLBriney@gmail.com
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Master of Science - Computer Science	Master of Science - Mathematics	BA/BS
Western Washington University	*Western Washington University*	*TESC*
GPA 3.87 | Year: 2023	GPA 3.87 | Year: 2019	2017

Technical Skills:

Python Modules: Gymnasium/OpenAiGym, HuggingFace, MatPlotLib, Numpy, Pandas, PyGame, PyTorch, RL-Baselines Zoo 3 / Stable Baselines 3, SciKit-Learn, TensorFlow, WandB; **Cloud and Virtualization**: Apptainer, AWS, Azure, Colab, Docker/Podman, SSH; **Computational Techniques**: Bayesian Decision Theory, Distributed Computing; **Data**: EnergyPlus, Excel, Simulation, SQL, Visualization; **Languages**: BASH, C, C++, C#, Java, Julia, MATLAB/Octave, Python, R; **AI**: API, Computer Vision, Deep Learning, Reinforcement Learning, Statistical Data Analysis, Time Series Forecasting, Transfer Learning, Transformers; **Workflow**: Git, Google Slides, LaTeX, Linux, Management, Project Collaboration, Teamwork

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Notable: Python (10 years), PyTorch (4 years), Reinforcement Learning (4 years), Numpy (9 years), Linux (12 years), Machine Learning (12 years)

Experience:

Machine Learning Engineer Intern	CompuMatter	FEB 2024 - OCT 2024

• Collaborated with the web development team to design and implemented a custom chatbot interface
Skills: LLM APIs, JavaScript, PHP, Python, Teamwork
• Designed and implemented a Convolutional Neural Network for the D-4 Computer Vision Kaggle competition, identifying sick plants with 96% accuracy. Placed second in the leader-board with a single submission
Skills: Computer Vision, Deep Learning, k-fold cross validation, PyTorch, Regularization, Skip-Connections

Research Associate	Western Washington University	AUG 2023 - JAN 2024

• Collaborated with PNNL sponsors and WWU research team in a grant funded research project, applying deep learning to physics-based control tasks
Skills: Deep Reinforcement Learning, Feature Engineering, Matplotlib, Mentoring, Phsyics Simulation, Presentations (verbal and written, technical and non-technical audiences), Teamwork
• Contributed to the open source Neuromancer project, being recognized as a notable contributor.
Skills: Code Review, Debugging, Git / GitHub, NumPy, PyGame

Graduate Research Assistant	Western Washington University	MAR 2022 - AUG 2023

• Grant funded project in load forecasting and energy flexibility in smart-buildings
• Optimized and deployed: CNNs, LSTMs, MLPs, and Transformers, improving R2 metric from 0.85 to 0.98
• Improved MSE by 15% by training on multiple climates vs training only on the objective climate
Skills: Deep Learning, Distributed Computing, EnergyPlus, Matplotlib, NumPy, Parallel Programming, PyTorch, Seaborn, Transfer Learning

Teaching Experience	WWU, SVC, BTC, TESC	DEC 2019 - MAR 2022

• Worked interactively with students from diverse backgrounds to assist understanding of course material. Led workshops, labs, and 1-1 sessions; online, in-person, and hybrid • Utilized a combination of visual and verbal communication, and collaborated with a teams of excellent tutors to best reach students with individualized strategy • Provided feedback on code submissions in Java, Python, and numerical analysis in SageMath

Maze-Runner AI	Modified Q-learning algorithm to prevent agent from getting stuck, enabling it to complete randomly generated mazes
Climate CNN	Predicted the day of the year within 1.4 days, reduced data dimensionality by $\frac{1}{13}$
Super Mario Bros AI	Computer Vision control leveraging CnnLstmPolicy from SB3-Contrib. Implemented feature engineered action space to improve agent's spatial reasoning, and ability to jump over tall pipes with planned jump height, enabling agent to reach level 2 over 100x faster. Used 32 parallel environments for robust data sampling