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**: Computer Vision, Deep Learning, Reinforcement Learning, Statistical Data Analysis, Transfer Learning, Transformers; **Workflow**: Git, Google Slides, LaTeX, Linux, Management, Project Collaboration.

Notable: Python (9 years), PyTorch (5 years), Numpy (7 years), Linux (12 years), Machine Learning (10 years).

Experience:

Machine Learning Engineer Intern	CompuMatter	FEB 2024 - PRESENT

• Collaborating with the web development team to integrate Large Language Models (LLMs) with RESTful services, enhancing user experience • Designed and implemented a custom LLM chatbot interface utilizing Python and Javascript • Designed and implemented a complex CNN utilizing numerous regularization techniques and k-fold cross validation, in the D-4 Computer Vision Kaggle competition, identifying sick plants with 96% accuracy. Placed second in the leaderboard with a single submission.

Research Associate	Western Washington University	AUG 2023 - JAN 2024

• Collaborated with PNNL sponsors and WWU research team in a grant funded research project, focused on applying deep learning to physics-based control tasks • Worked with sponsors to define achievable tasks • Presented verbal and written presentations, communicating model details and results to technical and non-technical audiences • Applied Deep Reinforcement Learning toward constrained energy management and reference tracking • Used physics simulators to generate data, improved numerical stability and robust sampling methods • Contributed to the open source Neuromancer project, being recognized as a notable contributor.

Graduate Research Assistant	Western Washington University	MAR 2022 - AUG 2023

• Grant funded smart-building project in *load forecasting* and *flexibility* with deep learning • Optimized and deployed: Transformers, LSTMs, CNNs and MLPs achieving an R^2 metric of 0.98 • Collaborated with building domain experts to ensure expertise was embedded in model selection • Implemented and graphically analyzed various cross-climate transfer learning scenarios, improving metrics by 15% vs training on only a single climate.

Teaching Experience	WWU, SVC, BTC, TESC, Independent	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.

Landscaping	Independent Contractor	JUN 2011-DEC 2019

• Communicated with clients to define tasks • Produced itemized invoices • Managed crews in tasks including: sprinkler installation, masonry, and yard design and installation.

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.