Sterling Suggs

Reliable and friendly ML research engineer with a strong applied math foundation.
5+ years of experience developing systems and tools to measure risk, quantify uncertainty,
and answer pressing questions in computer vision, reinforcement learning, and adversarial ML.

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Experience

Lead Research Scientist, AI/ML | Two Six Technologies July 2021 – Present
- Orchestrated large-scale ML robustness evaluations across multiple industry and government partners, architecting virtual and physical evasion and poisoning attacks to stress-test the resilience of state-of-the-art vision and detection models against out-of-distribution and adversarial data
- Developed and maintained Armory, a foundational framework for evaluating ML defenses against adversarial attacks. Crafted and integrated new models, datasets, metrics, attacks, defenses, visualizations, and other tools
- Researched, prototyped, and demonstrated AI-enabled product features including smart data annotation, keypoint pose estimation, fuzzy query matching, and 3D differentiable rendering, bridging the gap between theoretical vulnerabilities and deployable solutions
- Drove business development through technical writing for proposals, RFIs, white papers, demos and presentations for key customers and stakeholders

Research Assistant | BYU Computer Science Dept. 2017 – 2021
- Researched and implemented methods for distributional shift adaptation in reinforcement learning, to enable agents to maintain performance across diverse domains and accelerate convergence beyond standard gradient methods
- Engineered attention-based memory mechanisms for reinforcement learning to improve how agents represent and learn from sparse data
- Optimized memory efficiency, achieving 16x increase in memory throughput for fast information retrieval

Software Engineer | Veracity Forecasting and Analysis 2016 – 2017
- Developed physics-based predictive models to simulate complex material degradation, utilizing scientific computing to improve failure probability accuracy
- Modeled and simulated recruitment and inventory transition schedules in order to identify bottlenecks and potential optimization points
- Automated data collection for human resource planning, saving hours of weekly manual effort

Developer | BYU Mathematics Dept. 2015 – 2016
- Drafted and refined new scientific computing and data science programming labs for university curriculum
- Wrote new course material to teach math majors Python programming

Education

M.S. Computer Science: Machine Learning | Brigham Young University 2021
- Thesis: Reinforcement Learning with Memory Networks
- GPA: 3.93/4.0

B.S. Applied Mathematics | Brigham Young University 2017
- Computer Science minor
- GPA: 3.91/4.0

Technical Competencies

AI/ML: Computer Vision, Reinforcement Learning, Adversarial ML, Explainable AI, NLP, PyTorch, Tensorflow

Math and Stats: Bayesian Statistics, ODE/PDEs, Mathematical Modeling, Algorithm Design and Optimization

Scientific Computing: Numpy, Scipy, Pandas, Scikit-learn, Matplotlib, Xarray

Software Engineering: Python, C++, Java, Docker, Git/Mercurial, AWS, SQL, MongoDB, CI/CD, HTML, CSS