Joshua R. Bhagat Smith

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Education

Oregon State University	Corvallis, OR
PhD Robotics and AI	2020-2024
University of Arkansas	Fayetteville, AR
MS Computer Science	2015-2017
University of Arkansas	Fayetteville, AR
BS Computer Engineering	2011-2015

Skills

Software/Tools: Python | C++ | Java | ROS | DDS | Pytorch | JAX | Docker | Kubernetes | Protobuf

Technical Skills: Machine Learning | Reinforcement Learning | Signal Processing | Sensor Fusion | Control Systems | Modeling & Simulation | Human-Robot Interaction | Robotics Software

Soft Skills: Cross-functional Collaboration | Technical Writing | Strategic Decision Making | Knowledge Sharing | Research Presentation | Leadership | Mentoring

Professional Experience

Senior Research Scientist, Systems Technology & Research (STR) — 2026-

Researching AI & ML Techniques to developer advanced autonomy capabilities

AI & ML Lead Engineer, Peraton — 2024-

Technical lead on R&D projects focused on distributed ML pipelines and simulation frameworks.
- Designed and implemented a multi-GPU MLOps Platform that orchestrated distributed training of foundation models on custom datasets, enabling efficient hyperparameter optimization and model fine-tuning.
- Developed modeling and simulation tools for multi-robot underwater systems, supporting rapid and controlled pre-deployment experimentation.
- Contributed to adaptive control algorithms that detect internal malfunctions, enabling robots to maintain safe operation in real-world environments.

Graduate Research Assistant & Lab Manager, Oregon State University — 2020-2024

Researched time-series ML modeling of physiological data for adaptive cognitive state estimation.
- Implemented a real-time cognitive state estimation system, processing physiological signals (e.g., heart-rate, pupil diameter, EEG) from wearable sensors to support adaptive robot decision making.
- Created a novel Bayesian meta-learning framework for estimating a human's workload across multiple dimensions, enabling few-shot model adaptation for more accurate estimates for unknown tasks.
- Led human-subject evaluations to define performance parameters for supervising 500+ uncrewed aircraft, and analyzed eye-tracking data to assess operator workload, situational awareness, and attentional focus.
- Developed a human–swarm interface allowing one operator to control four 200-agent robot swarms, using heuristics and discrete-time Markov chain models to convey the swarm's long-term behavior.

Senior Software Engineer, HERE Technologies — 2017-2020

Developed distributed systems and ML pipelines for vehicle sensor data processing.
- Enhanced model accuracy for lane topology and sign localization by translating ML-research code into a concrete, scalable implementations.
- Developed cloud infrastructure for distributed data processing, analyzing millions of kilometers of data daily.
- Owned the research codebase, focused on CI/CD pipelines, reproducible tests, and code review standards.