# Joshua R. Bhagat Smith

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## Education

**Oregon State University** — Corvallis, OR
PhD Robotics and AI — 2020-current

**University of Arkansas** — Fayetteville, AR
MS Computer Science — 2015-2017

**University of Arkansas** — Fayetteville, AR
BS Computer Engineering — 2011-2015

## Professional Experience

**Graduate Research Assistant, Oregon State University** — 2020-current

- Research focusing on robust and flexible human-robot collaboration. Currently researching wearable computing and Bayesian meta-learning for modeling the dynamics of human cognitive states.
- Led the technical efforts for a team of five researchers in programming autonomous robots, developing real-time physiological signal processing software, and conducting human-subject studies.
- Designed and conducted human user studies evaluating the efficacy of human-robot teams and the transparency of underlying autonomy algorithms.

**Senior Software Engineer, HERE Technologies** — 2017-2020

- Highly Autonomous Driving group. Our team built an automated, high-accuracy map to enable autonomous driving functionality from large scale vehicle sensor systems.
- Assisted in designing machine learning and statistical models of vehicle sensor data.
- Developed cloud infrastructure to scale data processing to analyze millions of kilometers daily.

**Research Intern, NASA Langley Research Center** — Summer 2016

- Research focused on UAV navigation methods, near the ground, that avoid fixed obstacles such as buildings, power lines and trees.

## Skills

**Technical Skills:** Python | C++ | Pytorch | ROS | CUDA | Pyro | Machine Learning | Statistical Modeling | Planning Algorithms | Reinforcement Learning | Human Factors | Experimental Design

**Soft Skills**: Effective Communication | Cross-functional Collaboration | Technical Writing | Critical Thinking | Time Management | Research Presentation | Mentoring | Leadership

## Selected Publications

**J. Bhagat Smith**, J.A. Adams. "Adaptive Workload Modeling for Unknown Tasks", ACM Transactions on Human-Robot Interaction, 2024. (In Preparation).

**J. Bhagat Smith**, J.A. Adams. "Workload Estimation for Unknown Tasks: A Survey of Machine Learning Under Distribution Shift", in IEEE Transactions on Cognitive and Developmental Systems, 2024. (In Review).

F. Aderinto*, **J. Bhagat Smith***, M.R. Giolando, P. Baskaran, J.A. Adams, 'Improving Human-Robot Team Transparency with Eye-tracking based Situation Awareness Assessmen'," in *Companion of the ACM/IEEE International Conference on Human-Robot Interaction*, Late Breaking Report, USA, 2024 **[Best LBR Nominee]**

**J. Bhagat Smith**, S.A Toribio, P. Baskaran, J.A. Adams. "Uncertainty-Aware Visual Workload Estimation for Human-Robot Teams" in *Conference on Cognitive and Computational Aspects of Situation Management (CogSIMA)*, Philadelphia, PA, USA, 2023, pp. 1-8