

Joshua R. Bhagat Smith

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Education

Oregon State University PhD Robotics and AI (GPA: 3.9/4.0)	Corvallis, OR 2020-current
University of Arkansas MS Computer Science (GPA: 3.8/4.0)	Fayetteville, AR 2015-2017
University of Arkansas BS Computer Engineering (GPA: 3.3/4.0)	Fayetteville, AR 2011-2015

Professional Experience

Graduate Research Assistant/Lab Lead, Oregon State University	2020-current
<ul style="list-style-type: none">• Research Assistant<ul style="list-style-type: none">- Created a novel system to estimate a human's workload for unknown tasks (i.e., under distribution shift).- Led a team of five researchers in building real-time physiological signal processing software, conducting human-subject studies, creating machine learning models, and programming autonomous robots.- Collaborated to design and conduct a human subject evaluations to establish appropriate performance parameters for human supervision of multiple uncrewed aircraft operating beyond visual line of sight.• Lab Lead<ul style="list-style-type: none">- Designed, planned, and supervised undergraduate research projects.- Organized lab working groups where I taught technical concepts, software engineering tools and best practices, and skills for navigating research projects efficiently.	
Senior Software Engineer, HERE Technologies	2017-2020
<ul style="list-style-type: none">• Scaled HD mapping algorithms for self-driving cars to update all of North America every 5 minutes.	
Research Intern, NASA Langley Research Center	Summer 2016
<ul style="list-style-type: none">• Developed a clustering algorithms to generate geofences around electrical power lines.	

Skills

- **Technical Skills:** Python | C++ | Pytorch | ROS | Pandas | Scipy/Numpy | Git | Machine Learning | Bayesian Inference | Distribution Shifts | Deep Learning | Reinforcement Learning | Experimental Design
- **Soft Skills:** Time Management | Effective Communication | Collaboration | Critical Thinking | Technical Writing | Research Presentation | Mentoring | Leadership

Selected Publications

- J. Bhagat Smith**, J.A. Adams. "Adaptive Workload Modeling with Probabilistic Meta-Learning", IEEE Transactions on Human-Robot Interaction, 2024. (In Preparation).
- J. Bhagat Smith**, J.A. Adams. "Towards Workload Estimation for Unknown Tasks: A Survey of Non-IID Machine Learning for HRI," in IEEE Transactions on Cognitive and Developmental Systems, 2024. (In Review).
- 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
- J. Bhagat Smith**, P. Baskaran and J. A. Adams, "Decomposed Physical Workload Estimation for Human-Robot Teams," IEEE International Conference on Human-Machine Systems (ICHMS), Orlando, FL, USA, 2022, pp. 1-6