Jonathan Salfity

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linkedin.com/in/jsalfity | Google Scholar | Lab Profile | Personal Website
Austin, TX | U.S. Citizen

SUMMARY

- Final year PhD student with 7 years of corporate and 4 years of startup experience.
- Research focus in robotic skill & behavior composition, modular robots, control theory, GenAI.
- Corporate and startup experience in team management, fundraising, finance, and GTM.

ACADEMIC

Ph.D., Mechanical Engineering, *UT Austin*, Robotics. (Expected) 2026
Advisor: Mitch Pryor
Group: Nuclear and Applied Robotics Group
M.S., Mechanical Engineering, *UCLA*, Systems & Control, Robotics 2014
B.S., Mechanical Engineering, *UCLA* 2013

RESEARCH FOCUS

- Skill & Behavior Composition for Modular Robotics
- GenAI, Foundation Models for Robotic Behaviors and Skills
- Robust and Optimal Control for Nonlinear Systems

TECHNICAL PROFICIENCIES

Python, C++, Julia, MATLAB | PyTorch | Robot Operating System (ROS), Gazebo | Github, Jira
Robot Autonomy, Robotic Manipulation | Optimization | Control Theory | Reinforcement Learning
Technical Writing | Conference Publications | Patents | Business Stakeholder Management

PROFESSIONAL

Co-Founder/Advisor | *geCKo Materials* Campbell, CA | 2021 - Current

- Co-founded geCKo Materials to bring biomimicry, industrial grade adhesives to market.
- Contributed to $10M raise, expanded the team to 10 FTEs operating in a 10,000 sq. ft. manufacturing facility, ensuring weekly product shipments.

Cruise AI | *Cruise LLC*
Behaviors PhD Intern Remote | Summer 2024

- MLE on DriveGPT. Developed an autoregressive decoder within a large transformer model for external vehicle(s) trajectory prediction.

Motion Planning & Control PhD Intern San Francisco, CA | Summer 2023

- Trajectory generation analysis for self-driving vehicles. Kinematic and dynamic metrics formulation and implementation to analyze motion planning algorithms.

AI & Emerging Compute Lab, HP Labs | *HP Inc.* Palo Alto, CA | 2016 - 2020
Roboticist & Research Engineer

- Designed and implemented proof of concepts (PoCs) for mobile robots, often with compute-constrained on-board processors utilizing off-board ML servers.

Digital Manufacturing Lab, HP Labs | *HP Inc.* Palo Alto, CA & Singapore | 2019 - 2020
Robotics Principal Investigator for 3D Printing

- Led technical team of robotics and AI researchers from Prof. Phạm Quang-Cường's CRI Group at Nanyang Technological University (NTU), bridging university research to HP 3D Print business unit post-processing automation.
- Developed manipulator robotic system for cleaning 3D Printed parts, transferred computer vision and robotic manipulator software to 3D Print business unit.

Hardware R&D, HP 3D Print | *HP Inc.* San Diego, CA | 2014 - 2016
Control System and Servo Engineer

- Designed and implemented HP Fused-Deposition-Modeling 3D Printer prototype from first principles.
- Simulated digital twin of hardware with MATLAB and Simulink to conceptualize and prototype multi-input, multi-output control laws for three spatial-axes (xyz), extruder nozzle, and temperature.

PUBLICATIONS

- S Swanbeck, **J Salfity**, J Gunawan, C Van Sice, B Anderson, M Pryor "Deployment Is Not Destiny: Adapting Robots in the Field with Unseen Software, Hardware, and Compute Payloads," *(Submitted)* in *IEEE International Conference on Robotics and Automation*, May 2026
- **J Salfity**, C Van Sice, B Chen, S Swanbeck, B Anderson, M Pryor "No Reboot Required: Real-Time Modular Robot Payload Integration," In *IEEE International Conference on Ubiquitous Robotics*, July 2025.
- **J Salfity**, S Wanna, M Choi, M Pryor "Temporal and Semantic Evaluation Metrics for Foundation Models in Post-Hoc Analysis of Robotic Subtasks," Presented at *IEEE International Conference on Ubiquitous Robotics Workshop on Virtual Environment-Based Synthetic Data Generation for Robotic Training*, July 2025.
- S Wanna, A Luhtaru, R Barron, **J Salfity**, J Moore, C Matuszek, M Pryor "Let's Talk About Language! Investigating Linguistic Diversity in Embodied AI Datasets," In *IEEE ICRA Safe VLM Workshop*, May 2025.
- Yue Yu, **J Salfity**, D Fridovich-Keil, U Topcu. "Inverse Matrix Games with Unique Quantal Response Equilibrium," In *IEEE Control Systems Letters*, 2022
- H Nguyen, N Adrian, JLX Yan, **J Salfity**, W Allen, QC Pham. "Development of a robotic system for automated decaking of 3d-printed parts," In *IEEE International Conference on Robotics and Automation (ICRA)*, May 2020.

PATENTS

12 patents filed across robotic mobility, robotic manipulation, 3D Print, edge compute, AI/ML.
Patents in the public domain:

- A Iyer, C Makaya, **J Salfity**, Transmission Rate Modification Based on Predicted Data, US202/0353193A1
- W Allen, **J Salfity**, Mobile Autonomous Fleet Control, WO2020122953A1
- K Erickson, **J Salfity**, L Zhao, Modules of Three-Dimensional Printers, WO2020046267A1
- **J Salfity**, W Allen, H Horii, Control System for Mobile Robots, WO2019088990A1
- **J Salfity**, D Murphy, Mobile Robots to Generate Reference Maps for Localization, WO2019089018A1
- **J Salfity**, D Murphy, W Allen, Mobile Robots to Generate Occupancy Maps, WO2019089017A1
- S Stodder, **J Salfity**, M Majette, Correction of Filament Parameters, WO2017086908A1