

# Jonathan M. Salfity

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

## SUMMARY

- Year 3 PhD student with 7 years of corporate and 3 years of startup experience.
- Research focus in Robotic Behaviors, Control Theory, and, as it relates, Generative AI.
- Corporate and startup experience in team management, fundraising, finance, and GTM.

## ACADEMIC

**Ph.D., Mechanical Engineering, *UT Austin***, Systems & Control, Robotics, 2025 (*expected*)

*Advisors:* Mitch Pryor / David Fridovich-Keil

*Groups:* Nuclear and Applied Robotics Group / Control and Learning for Autonomous Robots

**M.S., Mechanical Engineering, *UCLA***, Systems & Control, Robotics, *Department Fellow*, 2014

**B.S., Mechanical Engineering, *UCLA***, *Cum Laude*, 2013

## RESEARCH FOCUS

- Robotic Behaviors, Motion Planning, and Control Theory
- GenAI, LLMs 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 initial fundraising, expanded the team to 4 FTEs operating in a 10,000 sq. ft. manufacturing facility, ensuring weekly product shipments.

**Cruise AI | *Cruise LLC*** San Francisco, CA | Summer 2023

Motion Planning & Control PhD Intern

- Trajectory generation analysis for self-driving vehicles.
- Pushed analysis code into production CI/CD.

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

Robotician & Research Engineer

- Designed and implemented proof of concepts (PoCs) for mobile robots, often with compute-constrained on-board processors utilizing off-board ML servers.
- Enhanced layers of the robotics stack through PoCs, including semantic mapping, autonomy, policy management, and human-robot interaction. Technologies developed led to patent filings and demonstrations for corporate executive stakeholders.

**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.***  
Control System and Servo Engineer

San Diego, CA | 2014 - 2016

- 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 & REPORTS

- Yue Yu, **J Salfity**, D Fridovich-Keil, U Topcu. Inverse Matrix Games with Unique Quantal Response Equilibrium. *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. *IEEE International Conference on Robotics and Automation*, Paris, France, May 2020
- **J Salfity**, D Murphy, M Anthony Lewis. Robust Reinforcement Learning Based Policy Development through Internal, External Parameter Variation. *HP Data Science & Knowledge Discovery Summit*, Vancouver, WA, August 2019
- W Staehler, **J Salfity**, T Paula, D Murphy. Multiple Policy Management for Multi-Skilled Agents. *HP Data Science & Knowledge Discovery Summit*, Vancouver, WA, August 2019
- **J Salfity**, H Horii, W Allen. Smart Mobile Robots with Human Emotion Detection. *HP Data Science & Knowledge Discovery Summit*, Vancouver, WA, May 2018
- **J Salfity**, D Murphy. Mobile Robot Map Building with the Automatic Exclusion of Known Objects using Object Recognition through Computer Vision. *HP Data Science and Knowledge Discovery Summit*, Vancouver, WA, May 2018

## 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