ADAM ALLEVATO

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WORK AND RESEARCH EXPERIENCE

Diligent Robotics: Perception/ML Team Manager, Robotics Software Engineer Jun 2021 - Present | Austin, TX

- Designing and training **deep world models** for navigation planning from 3D sensor data using PyTorch
- Trained custom **imitation learning models** for robot manipulation, tested on R&D robot hardware
- Built deployment stack for custom computer vision transformers, shipped to **100+ production robots**
- Shipped upload system that has automatically collected a 100+TB (growing) cloud dataset of robot sensor data
- Co-wrote visual servo controller to accurately press buttons, enabling **100k autonomous robot elevator rides**
- Co-managing team of 12 robotics engineers, including org design, engineering career levels development, hiring
- Planning **short and long-term AI strategy** with founders and presenting it to executives and investors

Pensa Systems, Austin, TX: Software Engineer Apr 2020 - Jun 2021 | Austin, TX

- Lead multiple projects in C++, Python, and ROS code, incl. custom fiducial detection and full behavior rewrite

UT Austin Socially Intelligent Machines (SIM) Lab: Graduate Research Assistant 2017-2020 | Austin, TX

- Researched simulation, sim2real, and deep learning techniques for robot manipulation in human environments
- Published 6 peer-reviewed papers, including at CoRL, AuRo, and HRI (Scholar)

UT Austin Nuclear and Applied Robotics Group (NRG): Graduate Research Assistant 2014-2017 | Austin, TX

- Led 4-student team and published 3 papers on computer vision for robot manipulators in radiation environments

Diligent Robotics: Engineering Intern Summer 2018 | Austin, TX

- Took company from 0→100 automated unit tests, robot software deployment time from 1 day→15 mins

Open Robotics (formerly OSRF): Software Engineering Intern Summer 2017 | Mountain View, CA

- Designed and developed the first-ever ROS2 pick-and-place demo, presented at ROSCon 2017

Los Alamos National Laboratory: Graduate Research Associate Summer 2015/2016 | Los Alamos, NM

EDUCATION

The University of Texas, Austin, TX 2014-2020

- **PhD, Mechanical Engineering**, Dissertation: Combining Simulated Predictions and Real-World Data for Efficient Robot Model Adaptation. *Advisors: Andrea Thomaz, Mitch Pryor*
- **Masters of Science**, Mechanical Engineering, Thesis: An Object Recognition and Pose Estimation Library for Intelligent Industrial Automation. *Advisor: Mitch Pryor*

Colorado State University, Fort Collins, CO 2010-2014

- **Bachelor of Science** *summa cum laude*, Mechanical Engineering

SKILLS

- Deep networks: Diffusion models, imitation learning, transformers, world models, CNNs, gradient-free optimizers
- Computer vision: OpenCV, PCL, 3D computer vision/point clouds, CNNs, transformers
- ML deployment: Docker, systemd, NVIDIA Jetson deployment, ONNX, TensorRT, Hydra
- ML infra: AWS SageMaker (Notebooks, Ground Truth), Label Studio, CVAT, Terraform, Lambda, S3, EC2
- Robotics (ROS, Gazebo, catkin, MoveIt!), Simulation (Bullet, Gazebo, Isaac)
- Core languages/tech: Python, PyTorch, NumPy/SciPy, Jupyter, Pandas, C++, Ansible

HONORS, AWARDS, SERVICE

Peer Reviewer, ICLR, NeurIPS, RA-L, IROS, HRI Pioneers	2020-Present
Outstanding Reviewer Award, NeurIPS conference	2021
US DOE Nuclear Energy University Program (NEUP) Fellow	2015-2018
AP-Google Scholarship	2013-2014
CSU College of Engineering Dean's List	2011-2014

PUBLICATIONS

A. Allevato, E. S. Short, M. Pryor, A. Thomaz. "Multiparameter Real-World System Identification using Iterative Residual Tuning". *Journal of Mechanisms and Robotics*. 2021

A. Allevato, E. S. Short, M. Pryor, A. Thomaz. "Model and Controller Adaptation with Unknown Human Preferences". Submitted to *Robotics: Science and Systems (RSS)*, incorporated to PhD thesis. 2021.

A. Allevato, M. Pryor, A. Thomaz. "Multidimensional System Identification using Iterative Residual Tuning". *ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC-CIE)*. 2020.

A. Allevato, E. S. Short, M. Pryor, A. Thomaz. "Iterative Residual Tuning for System Identification and Sim-to-Real Robot Learning". *Autonomous Robots*. 2020.

A. Allevato, E. S. Short, M. Pryor, A. Thomaz. "Learning Labeled Robot Affordance Models by using Simulations and Crowdsourcing". *Robotics: Science and Systems (RSS)*. 2020.

A. Allevato, E. S. Short, M. Pryor, A. Thomaz. "TuneNet: One-Shot Simulation Tuning for Physics Prediction and Robot Task Planning". *Conference on Robot Learning (CoRL)*. 2019. GitHub, Video, ImportAI

E. S. Short, **A. Allevato,** M. Pryor, A. Thomaz. "SAIL: Simulation-Informed Active In-the-Wild Learning". *International Conference on Human-Robot Interaction (HRI)*. 2019.

A. Allevato, A. Thomaz, M. Pryor. "Affordance Discovery using Simulated Exploration". *International Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*. 2018.

E. Paredes, C. Petlowany, M. Horn, **A. Allevato**, M. Pryor. "Automated glovebox workcell design". *Waste Management Symposium*. 2018.

A. Allevato, M. Horn, M. Pryor. "Demonstrating Autonomous and Robust Sorting in a Glovebox Environment". *American Nuclear Society Decommissioning and Remote Systems*. 2016.

A. Allevato, M. Pryor. "Characterizing Glovebox Automation Tasks using Partially Observable Markov Decision Processes". *American Nuclear Society Decommissioning and Remote Systems*. 2016.