Lin Guan

(+1) 512-458-0848 | lguan9@asu.edu | guansuns.github.io/ | linkedin.com/in/lin-guan/

Research Interests

My research interests lie at the intersection of **machine learning** (especially reinforcement learning and computer vision), **robotics**, and **human-robot interaction**. Specifically, I am working on:

(a) Developing algorithms that enable human users to effortlessly specify desired robot behaviors through human inputs such as symbolic concepts, natural language feedback, preference labels, demonstrations, and human gaze/attention information, etc. Applications include character/animation control, autonomous vehicles, and robot skill learning.

(b) Building intelligent agents that can learn to solve complex long-horizon tasks by integrating planning with reinforcement learning, and leveraging symbolic human knowledge (e.g., in the form of incomplete/imprecise symbolic domain models).

Education

Arizona State University   *Tempe, AZ*
Ph.D. Student in Computer Science   *Fall 2019 - Expected Spring 2024*
- GPA: 4.0/4.0

The University of Texas at Austin   *Austin, TX*
B.S. with Highest Honors in Computer Science   *Fall 2016 - Fall 2018*
- GPA: 3.97/4.0

Publications and Manuscripts

Leveraging Approximate Symbolic Models for Reinforcement Learning via Skill Diversity
Lin Guan*, Sarath Sreedharan* (equal contribution), Subbarao Kambhampati
*ICML 2022 (also received the **Best Paper Award** at PRL@ICAPS 2022 and accepted to RLDM 2022)*

Widening the Pipeline in Human-Guided Reinforcement Learning with Explanation and Context-Aware Data Augmentation
Lin Guan, Mudit Verma, Sihang Guo, Ruohan Zhang, Subbarao Kambhampati
NeurIPS 2021 (Spotlight, Top 3%)

Symbols as a Lingua Franca for Bridging Human-AI Chasm for Explainable and Advisable AI Systems
Subbarao Kambhampati, Sarath Sreedharan, Mudit Verma, Yantian Zha, Lin Guan
AAAI 2022, Blue Sky Track

Learning from Ambiguous Demonstrations with Self-Explanation Guided Reinforcement Learning
Yantian Zha, Lin Guan, Subbarao Kambhampati
AAAI-22 Workshop on Reinforcement Learning in Games

Enhanced Exploration in Neural Feature Selection for Deep Click-Through Rate Prediction Models via Ensemble of Gating Layers
Lin Guan, Xia Xiao, Ming Chen, Youlong Cheng
AAAI-22 Workshop on Practical Deep Learning

Contrastively Learning Visual Attention as Affordance Cues from Demonstrations for Robotic Grasping
Yantian Zha, Siddhant Bhambri, Lin Guan
IROS 2021

Atari-HEAD: Atari Human Eye-Tracking and Demonstration Dataset
Ruohan Zhang, Calen Walshe, Zhuode Liu, Lin Guan, Karl S. Muller, Jake A. Whritner, Luxin Zhang, Mary M Hayhoe, Dana H Ballard
AAAI 2020

Leveraging Human Guidance for Deep Reinforcement Learning Tasks
Ruohan Zhang, Faraz Torabi, Lin Guan, Dana H. Ballard, Peter Stone
IJCAI 2019, Survey Track

Experience

Google LLC *Sunnyvale, CA*
Student Researcher *May. 2022 - Aug. 2022*
- Worked on identifying and mitigating the negative impacts of factors that lead to degraded generalization performance of selective prediction systems under distributional shifts.

TikTok, ByteDance Ltd. *Mountain View, CA*
Software Engineer Intern (Applied Machine Learning) *May. 2021 - Aug. 2021*
- Worked with the Applied Machine Learning team to improve existing AutoML-inspired feature selection and network pruning methods for deep recommender systems.

Hauoli LLC *Austin, TX*
Software Engineer Intern *Aug. 2017 - June 2019*
- Developed three mobile games with Unity and Google VR SDK to demonstrate the company's human motion tracking technology at the Consumer Electronics Show (CES 2018), which attracted several potential business partners such as Bose and Samsung.
- Collaborated with a cross-functional team to build a Unity plugin that wraps Hauoli's tracking SDK written in C++ and released the plugin as the company's first product on Unity Asset Store.

Service

2022	**Served as a Reviewer for NeurIPS 2022**
2021	**Served as Program Committee for AAAI-22 and ICRA 2022**
2020	**Served as Program Committee for AAAI-21**

Awards

2021	**SCAI Doctoral Fellowship**, Arizona State University	*Tempe, AZ*
2020	**Graduate College Travel Award**, Arizona State University	*Tempe, AZ*
2019	**CIDSE Doctoral Fellowship**, Arizona State University	*Tempe, AZ*
2019	**Graduating with Highest Honors (Top 4%)**, The University of Texas at Austin	*Austin, TX*
2018	**2018 Honors Day, College Scholar (Top 20%)**, The University of Texas at Austin	*Austin, TX*
2018	**2018 University Honor (GPA Based Honors)**, The University of Texas at Austin	*Austin, TX*
2018	**Chevron Scholarship**, The University of Texas at Austin	*Austin, TX*
2017	**2017 University Honor (GPA Based Honors)**, The University of Texas at Austin	*Austin, TX*

Additional Information

Languages	Python, JavaScript, Java, C#, C, C++
Tools	PyTorch, Scikit-Learn, Numpy, Pandas, Flask, Unity, React JS
Work Eligibility	Eligible to work in the U.S.; will require visa sponsorship for full-time employment