AKANKSHA SARAN

https://asaran.github.io

EDUCATION

University of Texas at Austin Aug 2015 - Nov 2021
PhD in Computer Science *GPA: 3.96/4.00*

Carnegie Mellon University Aug 2013 - Dec 2014
MS in Robotics *GPA: 4.11/4.33*

Indian Institute of Technology Jodhpur Aug 2009 - May 2013
Bachelor of Technology in Computer Science and Engineering *GPA: 10.0/10.0*

RESEARCH INTERESTS

Reinforcement Learning, Imitation Learning, Modeling Human Behavior across Multimodal Interfaces

PUBLICATIONS

Akanksha Saran, Kush Desai, Mai Lee Chang, Rudolf Lioutikov, Andrea Thomaz, Scott Niekum. **Understanding Acoustic Patterns of Human Teachers for Robot Learning.** IROS 2022.

Tengyang Xie, Akanksha Saran, Dylan Foster, Lekan Molu, Ida Momennejad, Nan Jiang, Paul Mineiro, John Langford. **Interaction-Grounded Learning with Action-Inclusive Feedback.** Short Version: Workshop on Complex Feedback for Online Learning, ICML 2022.

Yuchen Cui, Bo Liu, Akanksha Saran, Stephen Giguere, Peter Stone, Scott Niekum. **Aux-AIRL: End-to-End Self-Supervised Reward Learning for Extrapolating beyond Suboptimal Demonstrations.** Short Version: Workshop on Self-Supervised Learning for Reasoning and Perception, ICML 2021.

Akanksha Saran, Kush Desai, Andrea Thomaz, Scott Niekum. **A Case for Leveraging Human Prosody during Robot Learning.** Short Version: Workshop on Sound in Human-Robot Interaction, HRI 2021.

Akanksha Saran, Ruohan Zhang, Elaine Schaertl Short, Scott Niekum. **Efficiently Guiding Imitation Learning Algorithms with Human Gaze.** Short version: Workshop on Reinforcement Learning in Games, AAAI 2020. Full version: AAMAS 2021.

Ruohan Zhang, Akanksha Saran, Bo Liu, Yifeng Zhu, Sihang Guo, Scott Niekum, Dana H. Ballard and Mary M. Hayhoe. **Human Gaze Assisted Artificial Intelligence: A Review.** IJCAI 2020.

Akanksha Saran, Elaine Schaertl Short, Andrea Thomaz, Scott Niekum. **Understanding Teacher Gaze Patterns for Robot Learning.** Short version: Pioneers Workshop, HRI 2019. Full version: CoRL 2019.

Akanksha Saran, Srinjoy Majumdar, Elaine Schaertl Short, Andrea Thomaz, Scott Niekum. **Human Gaze Following for Human-Robot Interaction.** Short version: Workshop on Social Robots in the Wild, HRI 2018. Full version: IROS 2018.

Akanksha Saran, Branka Lakic, Srinjoy Majumdar, Juergen Hess, Scott Niekum. **Viewpoint Selection for Visual Failure Detection.** IROS 2017.

Akanksha Saran, Damien Teney, Kris Kitani. **Hand Parsing for Fine-Grained Recognition of Human Grasps in Monocular Images.** Short version: Workshop on Observing and Understanding Hands in Action, CVPR 2015. Full version: IROS 2015.

WORKING PAPERS

Harshit Sikchi, Akanksha Saran, Wonjoon Goo, Scott Niekum. **A Ranking Game for Imitation Learning.**

WORK EXPERIENCE

Microsoft Research, New York City, USA
Dec 2021- Present
Postdoctoral Researcher *Supervisor: John Langford*
- Working as a member of the Reinforcement Learning group on problems related to interaction grounded learning, sequential decision making, and imitation learning.

NVIDIA, Seattle, USA
May - Aug 2018
Graduate Robotics Research Intern *Supervisors: Jonathan Tremblay, Mike Skolones*
- Refining human hand and object pose estimation from a monocular camera.
- Real-to-sim robot learning using generative adversarial imitation learning.

Apple, Cupertino, USA
May - Aug 2016
Graduate Research Intern *Supervisors: Shalini Sahoo, Samir Gehani*
- Worked with the Interactive Media Group (IMG) to develop algorithms pertaining to user media search.

Quality of Life Technology Center, CMU, Pittsburgh, USA
Jan - June 2015
Research Associate Staff *Supervisors: Aisling Kelliher, Thanassis Rikakis, Kris Kitani*
- Worked on an inter-disciplinary project for a vision-based stroke rehabilitation system for the home.

EPFL, Lausanne, Switzerland
May - July 2012
Undergraduate Research Intern *Supervisors: Madhura Purnaprajna, Paolo Ienne*
- Search for heterogeneous logic blocks in FPGA architectures to achieve reduction in area and delay.

IIT Delhi, New Delhi, India
May - July 2011
Undergraduate Intern *Supervisor: Smruti Ranjan Sarangi*
- Studying memory models for accelerators.

TEACHING EXPERIENCE

University of Texas at Austin
Fall 2018
Course: Artificial Intelligence

University of Texas at Austin
Fall 2015
Course: Elements of Computers and Programming

Carnegie Mellon University
Fall 2014
Course: Computational Photography

INVITED TALKS

HRI Student Speaker Series, Colorado School of Mines	August 2020
Workshop on Solutions for Socially Intelligent HRI in Real World Scenarios	March 2021
Microsoft Research	May 2021
IBM Research	May 2021
Facebook Reality Labs	June 2021
Google Research	June 2021

REVIEWING

HRI 2019, RSS 2019, ICRA 2019, HRI 2020, RSS 2020, NeurIPS 2020 (top 10%), AAAI 2021, ICLR 2021, IROS 2021, CoRL 2021, HRI 2022, IROS 2022, CoRL 2022

UNDERGRADUATE MENTEES

Sahil Jain	August 2020 - Present
Kush Desai	Sept 2018 - Feb 2021
Srinjoy Majumdar	Jan 2017 - Feb 2018

LEADERSHIP

Research Discussion Moderator   2022
Workshop on Human-Interactive Robot Learning, HRI 2022

Workshop Co-Organizer   2020 - 2021
Program Chair, HRI Pioneers 2021

Workshop Co-Organizer   2020
Advances and Challenges in Imitation Learning for Robotics, RSS 2020

Coordinator   2020
Girl Day, UT Austin

Workshop Co-Organizer   2019 - 2020
Web and Publicity Chair, HRI Pioneers 2020

Executive Committee Member   2017 - 2018
Graduate Representative Association of Computer Science (GRACS), UT Austin

Secretary   2016 - 2017
Graduate Women in Computing (GWC), UT Austin

Coordinator   2012, 2013
Entrepreneurship Meet, IIT Jodhpur

Assistant Coordinator   2012, 2013
Literature Club, IIT Jodhpur

Festival Co-Organizer   2012, 2013
Techno-Cultural Festival, IIT Jodhpur

OUTREACH

Panelist   2021
IIT Jodhpur Undergraduate Orientation

Panelist   2021
UT Women in Computer Science Research Hackathon

Volunteer   2021
AAAI Undergraduate Consortium

Volunteer   2019
UTCS Robotics Summer Camp

Volunteer   2018
UT Explore

Volunteer and Mentor	2017-2020
Women in Engineering Program (WEP), UT Austin	
Volunteer	2016, 2019
UTCS Hour of Code	
Mentor	2014, 2016
#include Fellowship Program	
Volunteer	2014
Women@SCS, CMU	
Mentor	2011-2012
Programming Club, IIT Jodhpur	
Volunteer	2009-2010
Weekly Rural Medical Health Program, IIT Kanpur	

HONORS AND AWARDS

AAMAS Scholar	2021
Google's CS Research Mentorship Program (CSRMP) Scholar	2021
Women in Engineering Leadership Scholarship, UT Austin	2020
HRI Pioneer	2019
Student and Developing Countries Travel Award, IROS	2018
ISSS Financial Aid Scholarship, UT Austin	2018, 2020
Adobe Research Fellowship Finalist	2018
CRA-W Graduate Women Cohort	2017
NSF Doctoral Consortium Award, IROS	2017
3rd Place, RoboCup@Home Domestic Standard Platform League	2017
UT Professional Development Award for travel to HRI, RSS, IROS, CoRL	2017-2020
Young Women Researcher Grant, RSS	2014
GSA/Provost Research and Conference Funding Award, CMU	2014
EPFL Research Scholarship (Declined)	2013
Google Anita Borg Memorial Scholarship Asia Pacific	2013
TOEFL Scholarship	2013
American Alumni Association Scholarship	2013
President's Gold Medal, IIT Jodhpur	2013
Proficiency Medal, IIT Jodhpur	2013
Overall Performance Award, IIT Jodhpur	2011-2013
USC Viterbi Research Scholarship (Declined)	2012
IIT-EPFL Internship Scholarship (Among 7 students selected all over India)	2012