AKANKSHA SARAN

akankshasaran@utexas.edu

https://asaran.github.io

EDUCATION

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

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

Interactive Machine Learning, Multimodal Learning

Technical Experience: Machine Learning, Deep Learning, Reinforcement Learning, Reinforcement Learning from Human Feedback, Imitation Learning, Active Learning, Computer Vision, Robotics, Human-Robot Interaction

WORK EXPERIENCE

Microsoft Research, New York City, USA   Dec 2021- Present
Postdoctoral Researcher   *Supervisors: Akshay Krishnamurthy, John Langford*
- Working as a member of the Reinforcement Learning group on problems related to sequential decision making with an eye towards real-world applications.

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.

PUBLICATIONS

$\alpha - \beta$ indicates alphabetical author order, $*$ indicates equal contribution.

Akanksha Saran, Safoora Yousefi, Akshay Krishnamurthy, John Langford, Jordan T. Ash. **Streaming Active Learning with Deep Neural Networks.** ICML 2023.

$(\alpha - \beta)$ Jessica Maghakian, Kishan Panaganti Badrinath, Paul Mineiro, Akanksha Saran, Cheng Tan. **Interaction-Grounded Learning for Recommender Systems.** Short Version: Workshop on Online Recommender Systems and User Modeling, RecSys 2022. Full Version: ICLR 2023.

Harshit Sikchi, Akanksha Saran, Wonjoon Goo, Scott Niekum. **A Ranking Game for Imitation Learning.** Short Version: Deep Reinforcement Learning Workshop, NeurIPS 2022. Full version: TMLR 2023.

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. Full version: NeurIPS 2022.

Akanksha Saran*, Kush Desai*, Mai Lee Chang, Rudolf Lioutikov, Andrea Thomaz, Scott Niekum. **Understanding Acoustic Patterns of Human Teachers Demonstrating Manipulation Tasks to Robots.** IROS 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

Alex Lamb, Dipendra Misra, Akanksha Saran, Tengyang Xie, John Langford. **Representation Learning from Videos via Latent Action Prediction for Reinforcement Learning.**

Akanksha Saran, Jacob Alber, Danielle Bragg, Cyril Zhang, John Langford. **Automated Eye Gaze Calibration during Gaze Typing.**

Safoora Yousefi, Hosein Hasanbeig, Akanksha Saran, Leo Batthauser, Hamid Palangi, Ida Mommenejad. **Neuroscience-inspired analysis of Representations in Large-Language Models.**

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
University of Southern California	April 2023
Sony AI Research	April 2023
Yale University	April 2023
Microsoft Research Redmond	May 2023
University of Washington	May 2023
Toyota Research Institute	June 2023
OpenAI	August 2023

HONORS AND AWARDS

EECS Rising Star	2023
AAMAS Scholar	2021
Google's CS Research Mentorship Program (CSRMP) Scholar	2021
Top 10 Finalist for the 3MT Competition, UT Austin	2020
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

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

GRADUATE MENTEES

Jessica Maghakian	August 2022 - May 2023
Harshit Sikchi	Sept 2021 - Feb 2023
Kishan Panaganti Badrinath	June 2022 - Dec 2022

UNDERGRADUATE MENTEES

Sahil Jain	Aug 2020 - May 2022
Kush Desai	Sept 2018 - Feb 2021
Srinjoy Majumdar	Jan 2017 - Feb 2018

LEADERSHIP

Workshop Co-Organizer   2023
Interactive Learning with Implicit Human Feedback, ICML 2023

Workshop Co-Organizer   2022
All Things Attention: Bridging Different Perspectives on Attention, NeurIPS 2022

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