

AKANKSHA SARAN

<https://asaran.github.io>

EDUCATION

University of Texas at Austin

PhD in Computer Science

Advisor: Prof. Scott Niekum

Aug 2015 - Nov 2021

GPA: 3.96/4.00

Carnegie Mellon University

MS in Robotics

Aug 2013 - Dec 2014

GPA: 4.11/4.33

Indian Institute of Technology Jodhpur

Bachelor of Technology in Computer Science and Engineering

Aug 2009 - May 2013

GPA: 10.0/10.0

RESEARCH INTERESTS

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

PUBLICATIONS

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

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.

($\alpha - \beta$) 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.

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 Schaefer, 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

Murat Han Aydoğan, Kenneth D Mitra, Kush Desai, Taylor Kessler Faulkner, Akanksha Saran*, Kim Baraka*. **“Yeess!” “No-oh-oh...” Implicit Robot Task Information from Prosody in Human Verbal Feedback**.

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 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
Course: Elements of Computers and Programming

Fall 2015

Carnegie Mellon University
Course: Computational Photography

Fall 2014

INVITED TALKS

| | |
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| 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

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

LEADERSHIP

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|---|-------------|
| Workshop Co-Organizer <i>All Things Attention: Bridging Different Perspectives on Attention, NeurIPS 2022</i> | 2022 |
| Research Discussion Moderator <i>Workshop on Human-Interactive Robot Learning, HRI 2022</i> | 2022 |
| Workshop Co-Organizer <i>Program Chair, HRI Pioneers 2021</i> | 2020 - 2021 |
| Workshop Co-Organizer <i>Advances and Challenges in Imitation Learning for Robotics, RSS 2020</i> | 2020 |
| Coordinator <i>Girl Day, UT Austin</i> | 2020 |
| Workshop Co-Organizer <i>Web and Publicity Chair, HRI Pioneers 2020</i> | 2019 - 2020 |
| Executive Committee Member <i>Graduate Representative Association of Computer Science (GRACS), UT Austin</i> | 2017 - 2018 |
| Secretary <i>Graduate Women in Computing (GWC), UT Austin</i> | 2016 - 2017 |
| Coordinator <i>Entrepreneurship Meet, IIT Jodhpur</i> | 2012, 2013 |
| Assistant Coordinator <i>Literature Club, IIT Jodhpur</i> | 2012, 2013 |

Festival Co-Organizer
Techno-Cultural Festival, IIT Jodhpur

2012, 2013

OUTREACH

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| Panelist <i>IIT Jodhpur Undergraduate Orientation</i> | 2021 |
| Panelist <i>UT Women in Computer Science Research Hackathon</i> | 2021 |
| Volunteer <i>AAAI Undergraduate Consortium</i> | 2021 |
| Volunteer <i>UTCS Robotics Summer Camp</i> | 2019 |
| Volunteer <i>UT Explore</i> | 2018 |
| Volunteer and Mentor <i>Women in Engineering Program (WEP), UT Austin</i> | 2017-2020 |
| Volunteer <i>UTCS Hour of Code</i> | 2016, 2019 |
| Mentor <i>#include Fellowship Program</i> | 2014, 2016 |
| Volunteer <i>Women@SCS, CMU</i> | 2014 |
| Mentor <i>Programming Club, IIT Jodhpur</i> | 2011-2012 |
| Volunteer <i>Weekly Rural Medical Health Program, IIT Kanpur</i> | 2009-2010 |

HONORS AND AWARDS

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| 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 |

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| 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 |