

# Pulkit Verma

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## Research Interests

AI Safety, AI Planning, Action-Model Learning, Analysis of Abstractions, and Robotics.

## Education

<b>Ph.D.</b> Computer Science 2018-2024	<b>Arizona State University</b> , School of Computing and Augmented Intelligence Thesis: <i>Data-Efficient Paradigms for Personalized Assessment of Taskable AI Systems</i> <a href="#">↗</a> Advisor: Siddharth Srivastava
<b>M.Tech.</b> Computer Science 2013-2015	<b>Indian Institute of Technology Guwahati</b> , Department of CSE Thesis: <i>Resource Usage Analysis for Speech Recognition Techniques</i> <a href="#">↗</a> Advisor: Pradip K. Das
<b>B.Engg.</b> Information Tech. 2007-2011	<b>Shri Vaishnav Institute of Technology &amp; Science, Indore</b> , Department of IT Capstone: Smart Analyzer - Predict and Cache Webpages based on Usage Advisor: Anand S. Rajawat

## Research and Professional Experience

Sep 2024 – (present)	<b>Postdoctoral Research Associate</b> , CSAIL, Massachusetts Institute of Technology. Advisor: Julie Shah. <i>Research Areas:</i> AI Interpretability, Model Learning, Black-Box Assessment
Aug 2018 – Aug 2024	<b>Graduate Research Associate</b> , AAIR Lab, ASU. Advisor: Siddharth Srivastava. <i>Research Areas:</i> Agent Assessment, Model Learning, Automated Planning
May 2023 – Aug 2023	<b>Research Scientist Intern</b> , Meta AI. Mentors: Rohan Chitnis, Alborz Geramifard, Nitin Kamra. <i>Research Areas:</i> Automated Planning, Curriculum Personalisation
Jul 2015 – Jul 2018	<b>Member of Technical Staff</b> , NetApp Inc. <i>Predicted workloads</i> for storage volumes using I/O patterns for All Flash systems.
Aug 2013 – May 2015	<b>Research Assistant</b> , IIT Guwahati. Mentors: Pradip K. Das, Shivashankar B. Nair, Shashi Shekhar Jha. <i>Research Areas:</i> Speech Processing, Mobile Robotics
Mar 2012 – Aug 2013	<b>Assistant Systems Engineer</b> , Tata Consultancy Services Pvt. Ltd. <i>Developed iOS applications</i> for various B2C companies.

## Teaching Experience

<b>Teaching Assistant</b> Arizona State University	CSE 571 Artificial Intelligence CSE 571 Artificial Intelligence	Spring 2022 Fall 2019
<b>Session Lead</b> Arizona State University	CSE 571 Artificial Intelligence CSE 471 Introduction to Artificial Intelligence CSE 574 Planning and Learning Methods in Artificial Intelligence CSE 471 Introduction to Artificial Intelligence	Spring 2023 Fall 2022 Spring 2021 Fall 2020

## Teaching Experience (continued)

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<b>Teaching Assistant</b> IIT Guwahati	CS 243 Software Engineering Lab	Spring 2015
	CS 566 Speech Processing	Fall 2014
	CS 462 Computer Graphics Lab	Spring 2014
	CS 513 Programming Lab	Fall 2013

## Honors and Awards

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<b>Graduate College Completion Fellowship</b> , ASU Graduate College <a href="#">↗</a> Highly competitive (1 per program per year) with tuition, stipend, and insurance for 1 year	June 2023
<b>Best Demo Award</b> , AAMAS 2022 <a href="#">↗</a> Awarded to one system demonstration at the AAMAS 2022 conference	May 2022
<b>Spring 2024 GPSA Jumpstart Research Grant</b> , ASU GPSA <a href="#">↗</a>	January 2024
<b>Fall 2023 GPSA Outstanding Research Award</b> , ASU GPSA <a href="#">↗</a>	October 2023
<b>Fall 2023 GPSA Outstanding Mentor Award</b> , ASU GPSA <a href="#">↗</a>	October 2023
<b>University (Engineering) Graduate Fellowship</b> , ASU Engineering and Graduate College <a href="#">↗</a>	March 2023
<b>SCAI Doctoral Fellowship</b> , School of Computing and Augmented Intelligence, ASU	March 2023
<b>Spring 2022 GPSA Teaching Excellence Award</b> , ASU GPSA <a href="#">↗</a>	April 2022
<b>SCAI Doctoral Fellowship</b> , School of Computing and Augmented Intelligence, ASU	March 2022
<b>Fulton Schools Experiential Learning Grant</b> , ASU Engineering <a href="#">↗</a>	October 2018
<b>Post Graduation Fellowship</b> , All India Council for Technical Education, Govt. of India <a href="#">↗</a>	2013-2015
<b>TCS ILP Kudos Award</b> , Tata Consultancy Services Ltd. (Best Trainee in the Batch)	May 2012

## Talks

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<b>Learning Interpretable Models for Autonomous Assessment of Taskable AI Systems</b> Brown Robotics Talks, BigAI, Brown University <a href="#">↗</a>	October 2024
<b>Learning Interpretable Models for Personalized Assessment of Taskable AI Systems</b> Research Seminar, Department of CSE, IIT Guwahati <a href="#">↗</a>	August 2024
<b>Learning Interpretable Models for Personalized Assessment of Taskable AI Systems</b> Interactive Robotics Group, Massachusetts Institute of Technology <a href="#">↗</a>	May 2024
<b>Learning Symbolic Models for Personalized Assessment of Taskable AI</b> ICAROS Lab, University of Southern California <a href="#">↗</a>	May 2024
<b>Data-Efficient Paradigms for Personalized Assessment of Taskable AI Systems</b> CHAI Hands-On, University of California Berkeley <a href="#">↗</a>	April 2024
<b>Data-Efficient Paradigms for Personalized Assessment of Black-Box AI Systems</b> Intelligent Robot Learning Lab, University of Alberta <a href="#">↗</a>	February 2024
<b>Discovering User-Interpretable Capabilities of Black-Box AI Agents</b> CHAI - 6th Annual Workshop <a href="#">↗</a>	June 2022

## Publications

\* denotes equal contribution

### Conference Proceedings and Journals

- [C1] Rushang Karia\*, **Pulkit Verma\***, Alberto Speranzon, and Siddharth Srivastava. “Epistemic Exploration for Generalizable Planning and Learning in Non-Stationary Settings”. In *34th International Conference on Automated Planning and Scheduling*, 2024. [📄](#)
- [C2] **Pulkit Verma**, Rushang Karia, and Siddharth Srivastava. “Autonomous Capability Assessment of Sequential Decision-Making Systems in Stochastic Settings”. In *37th Conference on Advances in Neural Information Processing Systems*, 2023. [📄](#)
- [C3] **Pulkit Verma**, Shashank Rao Marpally, and Siddharth Srivastava. “Discovering User-Interpretable Capabilities of Black-Box Planning Agents”. In *19th International Conference on Principles of Knowledge Representation and Reasoning*, 2022. [📄](#)
- [C4] Naman Shah\*, **Pulkit Verma\***, Trevor Angle, and Siddharth Srivastava. “JEDAI: A System for Skill-Aligned Explainable Robot Planning”. In *21st International Conference on Autonomous Agents and MultiAgent Systems (Demonstration Track)*, 2022. **[Best Demo Award]**. [📄](#)
- [C5] Rashmeet Kaur Nayyar\*, **Pulkit Verma\***, and Siddharth Srivastava. “Differential Assessment of Black-Box AI Agents”. In *36th AAAI Conference on Artificial Intelligence*, 2022. [📄](#)
- [C6] Yizhong Wang, Swaroop Mishra, Pegah Alipoormolabashi, Yeganeh Kordi, Amirreza Mirzaei, Anjana Arunkumar, Arjun Ashok, **Pulkit Verma**, et al. “Super-NaturalInstructions: Generalization via Declarative Instructions on 1600+ Tasks”. In *2022 Conference on Empirical Methods in Natural Language Processing*, 2022. [📄](#)
- [C7] **Pulkit Verma**, Shashank R Marpally, and Siddharth Srivastava. “Asking the Right Questions: Learning Interpretable Action Models Through Query Answering”. In *35th AAAI Conference on Artificial Intelligence*, 2021. [📄](#)
- [C8] **Pulkit Verma**, and Pradip K. Das. “A Comparative Study of Resource Usage for Speaker Recognition Techniques”. In *International Conference on Signal Processing and Communication*, 2016. [📄](#)
- [C9] **Pulkit Verma**, and Pradip K. Das. “i-Vectors in Speech Processing Applications: A Survey”. In *International Journal of Speech Technology*, 18(4), pp.529-546, 2015. [📄](#)
- [C10] Mayank Gupta, **Pulkit Verma**, Tuhin Bhattacharya, and Pradip K. Das. “A Mobile Agents based Distributed Speech Recognition Engine for Controlling Multiple Robots”. In *International Conference on Advances In Robotics*, 2015. [📄](#)
- [C11] **Pulkit Verma**, Mayank Gupta, Tuhin Bhattacharya, and Pradip K. Das. “Improving Services using Mobile Agents-based IoT in a Smart City”. In *International Conference on Contemporary Computing and Informatics*, 2014. [📄](#)

### Peer-Reviewed Workshop and Symposia Papers

- [W1] **Pulkit Verma** and Siddharth Srivastava. “User-Aligned Autonomous Capability Assessment of Black-Box AI Systems”. In *AAAI Spring Symposium on User-Aligned Assessment of Adaptive AI Systems*, 2024. [📄](#)
- [W2] Rushang Karia, Daksh Dobhal, Daniel Bramblett, **Pulkit Verma**, and Siddharth Srivastava. “Can LLMs translate SATisfactorily? Assessing LLM Capabilities in Generating Formal Specifications”. In *AAAI Spring Symposium on User-Aligned Assessment of Adaptive AI Systems*, 2024. [📄](#)
- [W3] **Pulkit Verma\***, Rushang Karia\*, Gaurav Vipat, Anmol Gupta, and Siddharth Srivastava. “Learning AI-System Capabilities under Stochasticity”. In *NeurIPS Workshop on Generalization in Planning*, 2023. [📄](#)
- [W4] Rushang Karia\*, **Pulkit Verma\***, Gaurav Vipat, and Siddharth Srivastava. “Epistemically Guided Exploration for Transferable Stochastic Planning in Non-stationary Relational Settings”. In *NeurIPS Workshop on Generalization in Planning*, 2023. [📄](#)
- [W5] **Pulkit Verma** and Siddharth Srivastava. “Learning Causal Models of Autonomous Agents using Interventions”. In *IJCAI Workshop on Generalization in Planning*, 2021. [📄](#)

- [W6] **Pulkit Verma**, Shashank Rao Marpally, and Siddharth Srivastava. “Learning User-Interpretable Descriptions of Black-Box AI System Capabilities”. In *ICAPS Workshop on Knowledge Engineering for Planning & Scheduling*, 2021. [↗](#)
- [W7] **Pulkit Verma** and Siddharth Srivastava. “Learning Interpretable Models for Black-Box Agents”. In *ICML Workshop on Human In the Loop Learning*, 2020. [↗](#)
- [W8] **Pulkit Verma**, and Siddharth Srivastava. “Learning Generalized Models by Interrogating Black-Box Autonomous Agents”. In *AAAI Workshop on Generalization in Planning*, 2020. [↗](#)
- [W9] Alok Shankar Mysore, Vikas S. Yaligar, Imanol Arrieta Ibarra, Camelia Simoiu, Sharad Goel, Ramesh Arvind, Chiraag Sumanth, Arvind Srikantan, Bhargav HS, Mayank Pahadia, Tushar Dobha, Atif Ahmed, Mani Shankar, **Pulkit Verma**, et al. “Investigating the ‘Wisdom of Crowds’ at Scale.”. In *Adjunct Proceedings of the 28th Annual ACM Symposium on User Interface Software and Technology (Poster)*, 2015. [↗](#)

## Preprints/Under Review

- [P1] Rushang Karia, Daniel Bramblett, Daksh Dobhal, **Pulkit Verma**, and Siddharth Srivastava. “ $\forall$ uto $\exists$ val: Autonomous Assessment of LLMs in Formal Synthesis and Interpretation Tasks”. 2024. [↗](#)
- [P2] Naman Shah, Jayesh Nagpal, **Pulkit Verma**, and Siddharth Srivastava. “From Reals to Logic and Back: Inventing Symbolic Vocabularies, Actions, and Models for Planning from Raw Data”. 2024. [↗](#)
- [P3] Mehdi Dadvar, Keyvan Majd, Elena Oikonomou, **Pulkit Verma**, Georgios Fainekos, and Siddharth Srivastava. “Joint Communication and Motion Planning for Cobots in Real-World Contexts”. 2024.
- [P4] Daksh Dobhal, Jayesh Nagpal, Rushang Karia, **Pulkit Verma**, Rashmeet K Nayyar, Naman Shah, and Siddharth Srivastava. “Using Explainable AI and Hierarchical Planning for Outreach with Robots”. 2024. [↗](#)

## Doctoral Consortium

- [D1] **Pulkit Verma**. “Data Efficient Paradigms for Personalized Assessment of Black-Box Taskable AI Systems”. In *38th AAAI Conference on Artificial Intelligence*, 2024. [↗](#)  
Mentor: Sheila McIlraith
- [D2] **Pulkit Verma**. “Sample Efficient Paradigms for Personalized Assessment of Taskable AI Systems”. In *32nd International Joint Conference on Artificial Intelligence*, 2023. [↗](#)  
Mentor: Peter Stone
- [D3] **Pulkit Verma**. “Data Efficient Paradigms for Personalized Assessment of Taskable AI Systems – Dissertation Abstract”. In *32nd International Conference on Automated Planning and Scheduling*, 2022. [↗](#)  
Mentor: Eva Onaindia
- [D4] **Pulkit Verma**. “Data Efficient Paradigms for Personalized Assessment of Taskable AI Systems”. In *19th International Conference on Principles of Knowledge Representation and Reasoning*, 2022.  
Mentor: Hector Geffner
- [D5] **Pulkit Verma**. “Data Efficient Algorithms and Interpretability Requirements for Personalized Assessment of Taskable AI Systems”. In *30th International Joint Conference on Artificial Intelligence*, 2021.  
Mentor: Leslie Pack Kaelbling

## Technical Reports

- [TR1] **Pulkit Verma** and Siddharth Srivastava. “Learning Causally Accurate Models for Autonomous Assessment of Deterministic Black-Box Agents”. Technical Report TR-ASUSCAI-2024-001, School of Computing and Augmented Intelligence, Arizona State University, 2024. [↗](#)

## Theses

- [T1] **Pulkit Verma**. “Data-Efficient Paradigms for Personalized Assessment of Taskable AI Systems”. (PhD Dissertation). Arizona State University, Tempe, AZ. [↗](#)
- [T2] **Pulkit Verma**. “Resource Usage Analysis for Speech Recognition Techniques”. (Masters Thesis). Indian Institute of Technology Guwahati, Guwahati, India. [↗](#)

## Intellectual Property

[IP1] Siddharth Srivastava and **Pulkit Verma**. “Systems and Methods for Independent Audit and Assessment Framework for AI Systems”. US Patent Application 63/597,259.

## Academic Service

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### Workshop Leadership

- AAAI 2024 Spring Symposium on User-Aligned Assessment of Adaptive AI Systems** [↗](#) 2023-2024  
Co-organizers: Rohan Chitnis, Georgios Fainekos, Hazem Torfah, Siddharth Srivastava
- NeurIPS 2023 Workshop on Generalization in Planning (GenPlan'23)** [↗](#) 2023  
Co-organizers: Siddharth Srivastava, Aviv Tamar, Felipe W. Trevizan
- IJCAI 2022 Workshop on Generalization in Planning (GenPlan'22)** [↗](#) 2022  
Co-organizers: Yuqian Jiang, Rushang Karia, Jendrik Seipp

### Journal Reviewer

- Neural Computing and Applications (NCAA) [↗](#) 2024-(present)
- Journal of Artificial Intelligence Research (JAIR) [↗](#) 2023-(present)
- IEEE Robotics and Automation Letters (RA-L) [↗](#) 2021-(present)

### Conference Program Committee/Reviewer

- AAAI Conference on Artificial Intelligence (AAAI) 2023 [↗](#), 2024 [↗](#), 2025 [↗](#)
- International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS) 2023 [↗](#), 2024 [↗](#), 2025 [↗](#)
- International Conference on Automated Planning and Scheduling (ICAPS) 2022 [↗](#), 2024 [↗](#), 2025 [↗](#)
- International Conference on Learning Representations (ICLR) 2024 [↗](#), 2025 [↗](#)
- Advances in Neural Information Processing System (NeurIPS) 2023 [↗](#), 2024 [↗](#)
- International Joint Conference on Artificial Intelligence (IJCAI) 2023 [↗](#), 2024 [↗](#)
- International Conference on Artificial Intelligence and Statistics (AISTATS) 2025 [↗](#)
- Robotics: Science and Systems Conference (R:SS) 2024 [↗](#)

### Workshop Program Committee/Reviewer

- NeurIPS Workshop on Explainable/Interpretable AI in Action (AIA) 2023 [↗](#), 2024 [↗](#)
- CoRL Workshop on Learning Effective Abstractions for Planning (LEAP) 2023 [↗](#), 2024 [↗](#)
- IJCAI Workshop on Bridging the Gap Between AI Planning and RL (PRL) 2023 [↗](#)
- ICAPS Workshop on Human-Aware and Explainable Planning (HAXP) 2023 [↗](#)
- CVPR Workshop on Open-Domain Reasoning Under Multi-Modal Settings (ODRUM) 2023 [↗](#)
- ICAPS Workshop on Explainable AI Planning (XAIP) 2021 [↗](#), 2022 [↗](#)
- IJCAI Workshop on Generalization in Planning (GenPlan) 2021 [↗](#)

### Miscellaneous Academic Service

- Co-author, ONR grant on Adaptive Training and Education for Adaptive AI Systems 2023
- Member, (Inaugural) PhD Council, School of Computing and AI, ASU 2023-2024
- Award and Grant Reviewer, Graduate and Professional Service Association (GPSA), ASU 2020-2022

## Academic Service (continued)

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### Volunteer

International Joint Conference on Artificial Intelligence (IJCAI)	2021 <a href="#">↗</a> , 2022 <a href="#">↗</a>
International Conference on Principles of Knowledge Representation & Reasoning (KR)	2018 <a href="#">↗</a> , 2022 <a href="#">↗</a>
International Conference on Learning Representations (ICLR)	2021 <a href="#">↗</a>
International Conference on Automated Planning and Scheduling (ICAPS)	2021 <a href="#">↗</a>
Southwest Robotics Symposium	2019 <a href="#">↗</a>
Workshop on GPU Programming and Applications, IITG	2014 <a href="#">↗</a>

### Mentoring

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#### PhD Mentees

Josh Rountree	Massachusetts Institute of Technology	2024-(present)
Ngoc La	Massachusetts Institute of Technology	2024-(present)
Daniel Bramblett	Arizona State University	2024-(present)

#### Masters Mentees

Samir Wadhwanian	Massachusetts Institute of Technology	2024-(present)
Jayesh Nagpal	Arizona State University	2022-2024
Daksh Dobhal	Arizona State University	2023-2024
Gaurav Vipat	Arizona State University	2023-2024
Trevor Angle	Arizona State University	2021-2022
Shashank Rao Marpally	Arizona State University	2020-2021

#### Undergrad Mentees

Dylan Fulop	Arizona State University	2022-2023
Kyle J. Atkinson	Arizona State University	2021-2023
Masih Tamsoy	Indian Institute of Technology Guwahati	2014-2015

### Outreach Activities

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Doctoral Mentor, School of Computing and Augmented Intelligence, ASU	2023-2024
Mentored junior PhD students and helped them navigate through various issues	
JEDAI Team Member, AAIR Lab, Arizona State University <a href="#">↗</a>	2022-2023
Visited High Schools in Tempe, AZ and taught basics of robot planning using JEDAI software	
Volunteer, Child Rights and You <a href="#">↗</a>	2016-2018
Taught and mentored primary school children in Koramangala PAG, Bengaluru	
Student Volunteer, Stanford Scholar Initiative <a href="#">↗</a>	2016-2018
Translated and recorded Python tutorial and research talks in Hindi	

### Other Affiliations

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<b>Member</b> , Association for the Advancement of Artificial Intelligence (AAAI) <a href="#">↗</a>	2020-(present)
<b>Graduate Student</b> , Center for Human, AI, and Robot Teaming, ASU <a href="#">↗</a>	2021-2024
<b>Affiliated Graduate Student</b> , Center for Human-Compatible AI, UCB <a href="#">↗</a>	2020-2024
<b>Participant</b> , 3rd Summer School on Cognitive Robotics, USC <a href="#">↗</a>	July 2019
<b>Online Contributor</b> , Stanford Scholar Initiative <a href="#">↗</a>	2016

References Available on Request