

Pulkit Verma

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Research Interests

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

Education

Ph.D. in Computer Science, Arizona State University *Tempe, USA*
School of Computing and Augmented Intelligence *Exp. May 2024*
Advisor: [Siddharth Srivastava](#)
Thesis: Data Efficient Paradigms for Personalized Assessment of Taskable AI Systems

Master of Technology, IIT Guwahati *Guwahati, India*
Department of Computer Science & Engineering *May 2015*
Advisor: [Pradip K. Das](#)
Thesis: Resource Usage Analysis for Speech Recognition Techniques [↗](#)

Bachelor of Engineering, SVITS, Indore *Indore, India*
Information Technology *June 2011*
Advisor: [Anand S. Rajawat](#)
Capstone: Smart Analyzer - Predict and Cache Webpages based on Usage.

Research and Professional Experience

Graduate Research Associate *Tempe, USA*
AAIR Lab, Arizona State University *Aug. 2018 - (present)*
Advisor: [Siddharth Srivastava](#)
Research Areas: Agent Assessment, Model Learning, Automated Planning, Robotics

Research Scientist Intern - AI *Menlo Park, USA*
Meta AI *May 2023 - Aug. 2023*
Mentors: [Rohan Chitnis](#), [Alborz Geramifard](#), [Nitin Kamra](#)
Research Areas: Automated Planning, Curriculum Personalisation

Member of Technical Staff [Storage Efficiency Developer] *Bengaluru, India*
NetApp Inc. *Jul. 2015 - Jul. 2018*

Graduate Assistant *Guwahati, India*
Robotics Lab, IIT Guwahati *Dec. 2013 - May 2015*
Mentors: [Pradip K. Das](#), [Shivashankar B. Nair](#), [Shashi Shekhar Jha](#)
Research Areas: Speech Processing, Mobile Robotics

Assistant Systems Engineer [iOS Application Developer] *Pune, India*
Tata Consultancy Services Ltd. *Mar. 2012 - Aug. 2013*

Teaching Experience

Graduate-level Courses

Teaching Assistant

CSE 571 Artificial Intelligence, ASU

Spring'22, Fall'19

CS 566 Speech Processing, IIT Guwahati

Fall'14

Session Lead

CSE 571 Artificial Intelligence, ASU

Spring'23

CSE 574 Planning and Learning Methods in Artificial Intelligence, ASU

Spring'21

Undergraduate-level Courses

Teaching Assistant

CS 243 Software Engineering Lab, IIT Guwahati

Spring'15

CS 462 Computer Graphics Lab, IIT Guwahati

Spring'14

CS 513 Programming Lab, IIT Guwahati

Fall'13

Session Lead

CSE 471 Introduction to Artificial Intelligence, ASU

Fall'22, Fall'20

Honors & Awards

Graduate College Completion Fellowship, ASU Graduate College [↗](#)

June 2023

Highly competitive (1 per program per year) with tuition, stipend, and insurance for 1 year

Best Demo Award, AAMAS 2022 [↗](#)

May 2022

Awarded to one system demonstration at the AAMAS 2022 conference.

Spring 2024 GPSA Jumpstart Research Grant, ASU GPSA [↗](#)

January 2024

Fall 2023 GPSA Outstanding Research Award, ASU GPSA [↗](#)

October 2023

Fall 2023 GPSA Outstanding Mentor Award, ASU GPSA [↗](#)

October 2023

University (Engineering) Graduate Fellowship, ASU Engineering and Graduate College [↗](#)

March 2023

SCAI Doctoral Fellowship, School of Computing and Augmented Intelligence, ASU

March 2023

Spring 2022 GPSA Teaching Excellence Award, ASU GPSA [↗](#)

April 2022

SCAI Doctoral Fellowship, School of Computing and Augmented Intelligence, ASU

March 2022

Fulton Schools Experiential Learning Grant, ASU Engineering [↗](#)

Oct 2018

Post Graduation Fellowship, All India Council for Technical Education, Govt. of India [↗](#)

2013-2015

TCS ILP Kudos Award, Tata Consultancy Services Ltd. (Best Trainee)

May 2012

Conference Travel Awards

AAAI 2024 Travel Grant, AAAI 2024

October 2023

NeurIPS 2023 Scholar Award, NeurIPS 2023

October 2023

IJCAI-AIJ 2022 Travel and Accessibility Grant, IJCAI-ECAI 2022

July 2022

KR 2022 Student Grant, KR 2022

July 2022

ICAPS Student Scholarship, ICAPS 2022

May 2022

ASU SCAI Travel Award (for IJCAI-ECAI 2022, KR 2022, NeurIPS 2023, AAAI)

2022-2023

ASU Graduate College Travel Award (for AAMAS 2021, ICLR 2021, ICML 2021, IJCAI 2021, IJCAI-ECAI 2022, IJCAI 2023)

2021-2023

ASU GPSA Travel Grant (for AAAI 2021, AAAI 2022, IJCAI-ECAI 2022, KR 2022, NeurIPS 2023, AAAI 2024)

2021-2023

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. (To appear) [📄](#)
- [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 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 Rao 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. [📄](#)

Workshop and Symposia Papers (Peer-Reviewed)

- [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. (To appear) [📄](#)
- [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.(To appear) [📄](#)
- [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 Generalized Models by Interrogating Black-Box Autonomous Agents”. In *AAAI Workshop on Generalization in Planning*, 2020. [📄](#)
- [W8] Alok Shankar Mysore et al. “Investigating the ‘Wisdom of Crowds’ at Scale.”. In *Adjunct Proceedings of the 28th Annual ACM Symposium on User Interface Software & Technology (Poster)*, 2015. [📄](#)

Under Preparation/Review

- [P1] 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. [📄](#)

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](#)

Service

Leadership Roles

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

Journal Reviewer

Journal of Artificial Intelligence Research (JAIR) ↗	2023
IEEE Robotics and Automation Letters (RA-L) ↗	2021

Conference PC Member

AAAI Conference on Artificial Intelligence (AAAI)	2023 ↗ , 2024 ↗
Intl. Conference on Autonomous Agents and Multi-Agent Systems (AAMAS)	2023 ↗ , 2024 ↗
International Joint Conference on Artificial Intelligence (IJCAI)	2023 ↗ , 2024 ↗
International Conference on Automated Planning and Scheduling (ICAPS)	2022 ↗ , 2024 ↗
International Conference on Learning Representations (ICLR)	2024 ↗
Robotics: Science and Systems Conference (RSS)	2024 ↗
Advances in Neural Information Processing System (NeurIPS)	2023 ↗

Workshop PC Member

NeurIPS Workshop on Explainable AI in Action (XAIA)	2023 ↗
CoRL Workshop on Learning Effective Abstractions for Planning (LEAP)	2023 ↗
IJCAI Workshop on Bridging the Gap Between AI Planning and RL (PRL)	2023 ↗
ICAPS Workshop on Human-Aware and Explainable Planning (HAXP)	2023 ↗
CVPR W. 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 ↗

Volunteer

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

Other 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

Mentorship

Masters Students

Daksh Dobhal , M.S. in Computer Science, ASU	2023-(present)
Jayesh Nagpal , M.S. in Robotics and Autonomous Systems, ASU	2022-(present)
Gaurav Vipat , M.S. in Computer Science, ASU	2023-2024
Trevor Angle , M.S. in Computer Science, ASU	2021-2022
Shashank Rao Marpally , M.S. in Robotics and Autonomous Systems, ASU	2020-2021

Undergraduate Students

Dylan Fulop , B.S. in Computer Science, ASU	2022-2023
Kyle J. Atkinson , B.S. in Computer Science, ASU	2021-2023
Masih Tamsoy , B.Tech. in Computer Science and Engineering, IIT Guwahati	2014-2015

Other Affiliations

Affiliated Graduate Student , Center for Human-Compatible AI, UCB ↗	2020-(present)
Participant , 3rd Summer School on Cognitive Robotics, USC ↗	July 2019
Online Contributor , Stanford Scholar Initiative ↗	2016