Arpit Bahety

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EDUCATION

The University of Texas at Austin   Austin, USA
Ph.D. in Computer Science   Aug 2023 - Present

- *Advisor*: Roberto Martín-Martín

Columbia University   New York, USA
Masters of Science in Computer Science, GPA: 4.02/4.00   Sep 2021 - May 2023

- *Advisor*: Shuran Song
- *Selected Coursework*: Robot Learning, Reinforcement Learning, Computational Aspects of Robotics, Self-supervised Learning, Advanced Algorithms, Computer Vision, Fundamentals of Distributed Systems

Indian Institute of Information Technology, Allahabad   Prayagraj, India
Bachelor of Technology in Information Technology, GPA: 9.17/10   Jul 2015–Jul 2019

- *Selected Coursework*: Deep Learning, Machine Learning, Artificial Intelligence, Image Processing, Data Structures and Algorithms, Linear Algebra, Convex Optimization, Probability and Statistics

PUBLICATIONS

MoMaGen: Generating Demonstrations under Soft and Hard Constraints for Multi-Step Bimanual Mobile Manipulation
Arpit Bahety*, Chengshu Li*, Mengdi Xu*, Hang Yin, Yunfan Jiang, Huang Huang, Josiah Wong, Sujay Garlanka, Cem Gokmen, Ruohan Zhang, Weiyu Liu, Jiajun Wu, Roberto Martín-Martín, Fei-Fei Li
Under Review, Webpage

SafeMimic: Towards Safe and Autonomous Human-to-Robot Imitation for Mobile Manipulation
Arpit Bahety, Arnav Balaji, Ben Abbatematteo, Roberto Martín-Martín
RSS 2025, Webpage

ScrewMimic: Bimanual Imitation from Human Videos with Screw Space Projection
Arpit Bahety, Priyanka Mandikal, Ben Abbatematteo, Roberto Martín-Martín
RSS 2024, Webpage
Outstanding Student Paper Award Finalist

BaRiFlex: A Robotic Gripper with Versatility and Collision Robustness for Robot Learning
Gu-Cheol Jeong, **Arpit Bahety**, Gabriel Pedraza, Ashish D. Deshpande, Roberto Martín-Martín
IROS 2024, Webpage
Best Paper Award on Robot Mechanisms and Designs

REFLECT: Summarizing Robot Experiences for FaiLure Explanation and CorrecTion
Zeyi Liu*, **Arpit Bahety***, Shuran Song
CoRL 2023, Webpage

Bag All You Need: Learning a Generalizable Bagging Strategy for Heterogeneous Objects
Arpit Bahety*, Shreeya Jain*, Huy Ha, Nathalie Hager, Benjamin Burchfiel, Eric Cousineau, Siyuan Feng, Shuran Song
IROS 2023, Webpage

Automatic quantification and visualization of street trees
Arpit Bahety, Rohit Saluja, Ravi Kiran Sarvadevabhatla, Anbumani Subramanian, C. V. Jawahar
Indian Conference on Computer Vision, Graphics and Image Processing, 2021, Paper

An approach to computational creation of insight problems using CreaCogs principles
Arpit Bahety, Ana-Maria Olteteanu
7th International Workshop on Artificial Intelligence and Cognition, 2019, Paper

Towards a multi-level exploration of human and computational re-representation in unified cognitive frameworks
Ana-Maria Olteteanu, Mikkel Schöttner, **Arpit Bahety**,
Frontiers in Psychology, Paper

*indicates equal contribution

RESEARCH / INDUSTRY EXPERIENCE

Robotics and Artificial Intelligence (RAI) Institute   Boston, MA
Ph.D. Research Intern   May 2025 - Aug 2025
- Research on Reinforcement Learning for robot manipulation.

Robot Interactive Intelligence (Robin) Laboratory   Austin, TX
Advised by Prof. Roberto Martín-Martín   Aug 2023 - Present
- Research on exploring how to use large-scale human video datasets to learn low-level control policies for robots.

Columbia Artificial Intelligence and Robotics (CAIR) Laboratory   New York, NY
Advised by Prof. Shuran Song   Oct 2021 - June 2023
- Research on deformable object manipulation. Implementing the first real-world, generalized bagging strategy using UR5 robots.
- Research on failure summarization and re-planning in long-horizon tasks performed by a robot.

Centre for Visual Information Technology (CVIT) Laboratory, IIIT-Hyderabad   Hyderabad, India
Advised by Prof. C. V. Jawahar, Prof. Ravi Kiran Sarvadevabhatla, Prof. Rohit Saluja   Jan 2021 - Sep 2021
- Research in computer vision. Implemented a real-world system to quantify and visualize street trees

Citigroup   Pune, India
Software Development Engineer   Sep 2019 - Dec 2020
- Developed voice assistance for an application that required users to perform a manual search and drag-and-drop actions. Increased user efficiency by 75%
- Created an offline hot-word detection model using Tensorflow.js. Built a speech-to-text model (in Python and Angular) using DeepSpeech. Fine-tuned the Language & the Acoustic model to incorporate Citi-specific words.

Creative Cognitive Systems group (CreaCogs), Freie Universität Berlin   Berlin, Germany
Advised by Dr. Ana-Maria Olteteanu   Jan 2019 - July 2019
- Research on understanding creative capabilities in humans. Created a framework to generate solve insight problems (one category of creative problem-solving in humans)

TEACHING

Teaching Assistant   Fall 2024
Gateway to Robotics   UT Austin
Teaching Assistant   Spring 2024
Robot Manipulation and Learning   UT Austin
Teaching Assistant   Spring 2022
Computational Aspects of Robotics   Columbia University
Teaching Assistant   Fall 2021
Neural Networks and Deep Learning   Columbia University

OTHER PROJECTS

Learning from Play for Deformable Object Manipulation   Jan - May 2022
Arpit Bahety, PDF   As part of COMS 6998: Self-supervised Learning
- Developed a framework for playful interactions with deformable objects to learn visual representations. Then learn task-specific linear heads on top of the representation
- Run experiments to assess the effectiveness of playful interactions for downstream deformable object manipulation tasks

Covid19 mRNA Vaccine Degradation Prediction .... Aug - Oct 2020
Arpit Bahety, Kaggle .... Bronze Medal, Kaggle
  - Modeled a Graph Convolutional Network with nucleotides as nodes and bonds as edges. Created another model based on Attention & RNN. Combined them to predict the stability of a mRNA sequence
  - Performed Denoising Autoencoder pre-training which enabled me to use test data too. Used output of the encoder part of the Autoencoder as input to the Attention + RNN model

Hand Gesture based Human-Robot Interaction .... Jul-Dec 2018
Arpit Bahety, Ankur Dengla, PDF .... As part of Deep Learning, IIIT-A
  - Developed a 3D CNN model to recognize gesture in the form of videos. Trained it on the 20BN-Jester dataset. Eight gesture classes used. Top 1 validation accuracy of 96.784 % & Top 1 test accuracy of 96 %
  - Incorporated the model with Nao Robot where Nao responds to the gestures appropriately

GitRate: a Web Application for rating GitHub Profile .... Jan-Mar 2018
Arpit Bahety*, Gaganjeet Reen*, Video
  - A web application summarizing and rating GitHub profiles to aid in candidate selections for hackathons and for company Recruitments
  - Trained a neural network for predicting the score of a user/group of users. Main features for the neural network are - Stars, forks, commits to repository, number of followers, following, open-source commits
  - Recommendations on how to improve your GitHub profile

Honors and Awards

Best Paper Award on Robot Mechanisms and Designs, International Conference on Intelligent Robots and Systems — Oct 2024
Outstanding Student Paper Award Finalist, Robotics: Science and Systems — Jul 2024
Course Assistant Fellowship, Columbia University — Jan 2022
Bronze, OpenVaccine Kaggle challenge — Oct 2020
Captain of Boys Tennis & Basketball Team, IIIT-Allahabad, — 2017-2019
Member of Music Society, IIIT-Allahabad, — 2016-2019
Gold, Parliamentary Debate — Feb 2016

Academic Service

Reviewer: ICRA IROS, CoRL

Languages

English, Hindi