DR. ROHAN PAUL

Indian Institute of Technology Delhi, India
Email: rohan@cse.iitd.ac.in, Website: https://www.cse.iitd.ac.in/~rohanpaul/
Address: Room 414, School of IT Building

CURRENT POSITION

Indian Institute of Technology (IIT), Delhi, India October 2019 - Present
Faculty Member *New Delhi, India*

Assistant Professor, Department of Computer Science and Engineering (CSE)
Joint Faculty, School of Artificial Intelligence (ScAI)
Associate Faculty, School of Information Technology (SIT)
Research Areas: Robotics. Artificial Intelligence. Assistive Technologies.

EDUCATION

Massachusetts Institute of Technology (MIT), USA 2015 - 2019
Postdoctoral Associate
Robust Robotics Group, Computer Science and Artificial Intelligence Laboratory (CSAIL)
Advisor: Prof. Nicholas Roy

University of Oxford, UK 2008 - 2012
Doctor of Philosophy (D.Phil.)
Mobile Robotics Group, Department of Engineering Science
Supervisor: Prof. Paul Newman

Indian Institute of Technology (IIT), Delhi, India 2003 - 2008
Dual Degree, Bachelors of Technology (B. Tech.) & Masters of Technology (M. Tech.)
Department of Computer Science and Engineering

EXPERIENCE

Indian Institute of Technology (IIT), Delhi, India November 2012 - March 2015
Postdoctoral Fellow and Senior Project Associate

Department of Computer Science and Engineering/ School of IT
Advisors: Prof. M. Balakrishnan and Prof. P.V.M. Rao

Massachusetts Institute of Technology (MIT), USA February - March 2012
Visiting Researcher

Distributed Robotics Lab, Computer Science and Artificial Intelligence Laboratory (CSAIL)
Advisors: Prof. Daniela Rus and Dr. Dan Feldman

Skoll Center for Social Enterprise, University of Oxford, UK 2011 - 2012
Associate Fellow

Awarded fellowship by the Said Business School for work in Affordable Technology Development.

Max Planck Institute (MPI) of Biological Cybernetics, Germany May - July 2007
Undergraduate Research Scientist

Department of Empirical Inference (now called MPI for Intelligent Systems)
Advisor: Prof. Bernhard Scholkopf

PUBLICATIONS: AS ASSISTANT PROFESSOR (FROM OCTOBER 2019 - PRESENT)

Journal Papers

[J7] An Intelligence Architecture for Grounded Language Communication with Field Robots
T. M. Howard, E. Stump, J. Fink, J. Arkin, R. Paul, D. Park, S. Roy, D. Barber, R. Bendell, K. Schmeckpeper,J. Tian, J. Oh, M. Wigness, L. Quang, B. Rothrock, J. Nash, M. R. Walter, F. Jentsch and N. Roy.
The Journal of Field Robotics (JFR), 2022
Link: https://www.journalfieldrobotics.org/Field_Robotics/Volume_2.html

[J6] TOOLTANGO: Common sense Generalization in Predicting Sequential Tool Interactions for Robot Plan Synthesis.
Tuli, Shreshth, Rajas Bansal, Rohan Paul and Mausam
Journal of Artificial Intelligence Research (JAIR) : 1595-1631, 2022
Link: https://www.jair.org/index.php/jair/article/view/13791

[J5] Multi-Modal Estimation and Communication of Latent Semantic Knowledge for Robust Execution of Robot Instructions
Daehyung Park, Jacob Arkin, Subhro Roy, Matthew R. Walter, Nicholas Roy, Thomas M. Howard, and Rohan Paul
The International Journal of Robotics Research (IJRR), 2020

Conference Papers

[C29] GoalNet: Inferring Conjunctive Goal Predicates from Human Plan Demonstrations for Robot Instruction Following
Shreya Sharma, Jigyasa Gupta, Shreshth Tuli, Rohan Paul, Mausam
The 38th Annual AAAI Conference on Artificial Intelligence, 2024

[C28] Learning Neuro-symbolic Programs for Language Guided Robot Manipulation
Namasivayam K, Himanshu Singh, Vishal Bindal, Arnav Tuli, Vishwajeet Agrawal, Rahul Jain, Parag Singla, Rohan Paul
International Conference on Robotics and Automation (ICRA), 2023

[C27] TANGO: Commonsense Generalization in Predicting Tool Interactions for Mobile Manipulators
Shreshth Tuli, Rajas Bansal, Rohan Paul and Mausam
Thirtieth International Joint Conference on Artificial Intelligence(IJCAI-21), 2021

[C26] Leveraging Past References for Robust Language Grounding
Subhro Roy, Michael Noseworthy, Rohan Paul, Daehyung Park, and Nicholas Roy.
Conference on Computational Natural Language Learning (CoNLL), 2019

[C25] Inferring Task Goals and Constraints using Bayesian Nonparametric Inverse Reinforcement Learning
Daehyung Park, Michael Noseworthy, Rohan Paul, Subhro Roy, and Nicholas Roy.
Conference on Robot Learning (CoRL), 2019

[C24] Task-Conditioned Variational Autoencoders for Learning Movement Primitives
Michael Noseworthy, Rohan Paul, Subhro Roy, Daehyung Park, and Nicholas Roy.
Conference on Robot Learning (CoRL), 2019

Peer-reviewed Workshop Papers

[WS13] Learning Neuro-symbolic Programs for Language-Guided Robotic Manipulation
Namasivayam Kalithasan, Himanshu Singh, Vishal Bindal, Arnav Tuli, Vishwajeet Agrawal, Rahul

Jain, Parag Singla and Rohan Paul
Workshop in Neuro Causal and Symbolic AI in Neural Information Processing Conference 2022.

[WS12] GoalNet: Inferring Conjunctive Goal Predicates from Human Plan Demonstrations for Robot Instruction Following
Shreya Sharma, Jigyasa Gupta, Shreshth Tuli, Rohan Paul, Mausam
Workshop: Bridging the Gap Between AI Planning and Reinforcement Learning held at the International Conference on Automated Planning (ICAPS) 2022

[WS11] ToolNet: Using Commonsense Generalization for Predicting Tool Use for Robot Plan Synthesis.
Rajas Bansal, Shreshth Tuli, Rohan Paul and Mausam.
Robotics Science and Systems Conference: Workshop on Imitation Learning, July 2020

[WS10] Learning Generalizable Task Policies for Embodied Agents in Domains with Rich Inter-object Interactions
Mustafa Chasmai, Shreshth Tuli, Mausam, Rohan Paul
Conference on Robot Learning Workshop 2022
https://openreview.net/forum?id=OFkgngAbwQ

Papers under Review

[R2] Learning to Recover from Plan Failures using Fast Discrepancy-Aware Neuro-Symbolic Search
Arnav Tuli, Vishal Bindal, Namasivayam Kalithasan, Himanshu Gaurav Singh, Parag Singla, Rohan Paul
Paper under review at: IEEE International Conference on Robotics and Automation (ICRA) 2024

[R1] Unsupervised Learning of Neuro-symbolic Rules for Generalizable Context-aware Planning in Object Arrangement Tasks
Siddhant Sharma, Shreshth Tuli, and Rohan Paul
Paper under review at: IEEE International Conference on Robotics and Automation (ICRA), 2023

PUBLICATIONS: BEFORE APPOINTMENT AT IIT DELHI (FROM 2007 - 2019)

Journal Papers

[J4] Efficient Grounding Abstract Spatial Concepts for Natural Language Interaction with Robot Platforms
Rohan Paul, Jacob Arkin, Derya Aksaray, Nicholas Roy and Thomas Howard.
International Journal of Robotics Research (IJRR), 2017.

[J3] Introspective Classification for Lifelong Semantic Mapping.
Hugo Grimmett, Rudolf Triebel, Rohan Paul, and Ingmar Posner
International Journal of Robotics Research (IJRR), 2015.

[J2] Seeking Out Perplexing Images for Ever Improving Navigation.
Rohan Paul and Paul Newman.
International Journal of Robotics Research (IJRR), 2013.
Special Issue on Lifelong Learning for Robotics.

[J1] The New College Data Set 2.2 km of Vision and Laser Data.
Mike Smith, Ian Baldwin, Winston Churchill, Rohan Paul and Paul Newman.
International Journal of Robotics Research (IJRR), May. 2009.

Conference Papers

[C23] Real-Time Human-Robot Communication for Manipulation Tasks in Partially Observed Environments.

Jacob Arkin, Rohan Paul, Daehyung Park, Subhro Roy, Nicholas Roay and Thomas M. Howard.
To appear in the International Symposium on Experimental Robotics (ISER), 2018.

[C22] Grounding Robot Plans from Natural Language Instructions with Incomplete World Knowledge.
Daniel Nyga, Subhro Roy, Rohan Paul, Daehyung Park, Mihai Pomarlan, Michael Beetz and Nicholas Roy.
To appear in the Conference on Robot Learning (CoRL), 2018

[C21] Grounding Natural Language Instructions with Unknown Object References using Learned Visual Attributes.
Nicole Glabinski, Rohan Paul and Nicholas Roy.
AAAI Fall Symposium on Natural Communication for Human-Robot Collaboration, 2017.

[C20] Grounding Abstract Spatial Concepts for Language Interaction with Robots.
Rohan Paul, Jacob Arkin, Nicholas Roy and Thomas Howard.
International Joint Conference on Artificial Intelligence (IJCAI), 2017.
Invited Contribution for the Sister Conference Best Paper Track

[C19] Learning Unknown Groundings for Natural Language Interaction with Mobile Robots.
Mycal Tucker, Derya Aksaray, Rohan Paul, Gregory Stein and Nicholas Roy.
International Symposium on Robotics Research (ISRR), 2017.

[C18] Temporal Grounding Graphs for Language Understanding with Accrued Visual-Linguistic Context.
Rohan Paul, Andrei Barbu, Sue Felshin, Boris Katz and Nicholas Roy.
International Joint Conference on Artificial Intelligence (IJCAI), 2017.

[C17] Efficient Grounding Abstract Spatial Concepts for Natural Language Interaction with Robot Manipulators.
Rohan Paul, Jacob Arkin, Nicholas Roy and Thomas Howard.
International Conference on Robotics Science and Systems (RSS), 2016
Best Conference Paper Award

[C16] Visual Precis Generation using Coresets.
Hugo Grimmett, Rohan Paul, Rudolf Triebel and Ingmar Posner.
IEEE International Conference on Robotics and Automation (ICRA), Hong Kong. 2014.

[C15] A Compliant Mechanism Design for Refreshable Braille Display Using Shape Memory Alloy.
Ankit Kumar, Dhruv Gupta, Pulkit Sapra, Mayank Raj, Akash Anand, Vinit Darda, Rohan Paul, M. Balakrishnan and P.V.M. Rao.
ASME International Conference on Mechatronics and Embedded Systems and Applications (MESA). 2015.

[C14] Edutactile: A Tool for Rapid Generation of Accurate Guideline-compliant Tactile Graphics for Science and Mathematics.
Mrinal Mech, Kunal Kwatra, Supriya Das, Piyush Chanana, Rohan Paul and M. Balakrishnan.
International Conference on Computers Helping People with Special Needs (ICCHP), 2014.

[C13] Design of an Affordable, Multi-modal, Interactive Braille Tutor System.
M. Balakrishnan, Rohan Paul and P. V. M. Rao.
International Conference on Blindness, Technology and Multi-modal Reading, 2014.

[C12] Dealing with Shadows: Capturing Intrinsic Scene Appearance for Image-based Outdoor Localisation.
Peter Corke, Rohan Paul, Winston Churchill and Paul Newman.
International Conference on Intelligent Robots and Systems (IROS). 2013.
Best Conference Paper Award

[C11] Knowing When We Don't Know: Introspective Classification for Mission-Critical Decision Making.
Hugo Grimmett, Rohan Paul, Rudolf Triebel and Ingmar Posner.
IEEE International Conference on Robotics and Automation (ICRA), 2013.

[C10] Driven Learning for Driving: How Introspection Improves Semantic Mapping.
Rudolf Triebel, Hugo Grimmett, Rohan Paul and Ingmar Posner.
International Symposium on Robotics Research (ISRR), 2013.

[C9] An Indoor Path-guidance and Navigation System for the Visually Impaired.
Dhruv Jain, Rohan Paul, M. Balakrishnan.
ACM SIGACCESS Conference on Computers and Accessibility (ASSETS), 2013.

[C8] Application of Shape Memory Alloy (SMA) Based Actuation for Refreshable Display of Braille
Anshul Singhal, Pranay Jain, Piyush Chanana, Dhruv Jain, Rohan Paul, M. Balakrishnan and P.V.M. Rao.
ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference IDETC/CIE, 2013.

[C7] Parsing Outdoor Scenes from Streamed 3D Laser Data Using Online Clustering and Incremental Belief Updates.
Rudolf Triebel, Rohan Paul, Daniela Rus and Paul Newman.
American Association of Artificial Intelligence (AAAI) Conference, 2012.

[C6] How was your day? Online Visual Workspace Summaries using Incremental Clustering in Topic Space.
Rohan Paul, Daniela Rus and Paul Newman.
IEEE International Conference on Robotics and Automation (ICRA), 2012.

[C5] Semantic Categorization of Outdoor Scenes with Uncertainty Estimates using Multi-Class Gaussian Process Classification.
Rohan Paul, Rudolf Triebel, Daniela Rus and Paul Newman.
International Conference on Intelligent Robots and Systems (IROS), 2012.

[C4] Design and User Testing of an Affordable Cellphone based Indoor Navigation System for the Visually Impaired.
Dhruv Jain, Prabhav Agarwal, Kartik Maheshwari, Aman Mittal, Rohan Paul, Supriya Das, Saurabh Sanyal, Yogesh Taneja, Dipendra Manocha, M. Balakrishnan and P.V.M. Rao.
International Conference on Mobility and Transport for Elderly and Disabled Persons (TRANSED), 2012.
Best Conference Paper Award

[C3] Self-Help: Seeking Out Perplexing Images for Ever Improving Navigation Rohan Paul and Paul Newman.
IEEE International Conference on Robotics and Automation (ICRA), 2011.

[C2] FABMAP3D: Topological Mapping with Visual and Spatial Appearance
Rohan Paul and Paul Newman.
IEEE International Conference on Robotics and Automation (ICRA), 2010.
Finalist: Best Vision Paper Award (1 of 4)

[C1] Smart cane for the visually impaired: Design and controlled field testing of an affordable obstacle detection system.
Vaibhav Singh, Rohan Paul, Dheeraj Mehra, Anuraag Gupta, Vasu Dev Sharma, Saumya Jain, Chinmay Agarwal, Ankush Garg, Sandeep Singh Gujral, M. Balakrishnan, Kolin Paul, Prof. P.V.M. Rao and Dipendra Manocha.
International Conference on Mobility and Transport for Elderly and Disabled Persons (TRANSED),

2010.
Best Conference Paper Award

Workshop Papers

[WS9] Temporal Grounding Graphs for Language Understanding with Accrued Visual-Linguistic Context.
Rohan Paul, Andrei Barbu, Sue Felshin, Boris Katz and Nicholas Roy.
1st Workshop on Language Grounding in Robotics, American Computational Linguistics (ACL) Conference, 2017.

[WS8] Grounding Spatial Concepts for Autonomous Mobile Robots.
Thomas Howard, Rohan Paul, Derya Aksaray, Jacob Arkin, and Nicholas Roy.
8 th International Conference on Applied Human Factors and Ergonomics (AHFE), June 2017

[WS7] Knowing When We Don't Know: Introspective Classification for Robust Decision Making in Mission-Critical Scenarios.
Rohan Paul, Hugo Grimmett, Rudolf Triebel and Ingmar Posner.
Reinforcement Learning and Decision Making (RLDM), 2013.

[WS6] Introspective Active Learning for Scalable Semantic Mapping
Rudolf Triebel, Hugo Grimmett, Rohan Paul and Ingmar Posner
Workshop on Active Learning in Robotics, Robotics: Science and Systems (RSS), 2013.

[WS5] Parsing Outdoor Scenes from Streamed 3D Laser Data Using Online Clustering and Incremental Belief Updates.
Rudolf Triebel, Rohan Paul and Paul Newman.
Lifelong Learning for Mobile Robotics, International Conference on Intelligent Robots and Systems (IROS), 2012.

[WS4] Topological Mapping with Vision and Laser.
Rohan Paul and Paul Newman.
Annual Meeting of the Royal Institute of Navigation (RIN), UK, 2012.

[WS3] Self Help: Seeking Out Perplexing Images for Ever Improving Navigation.
Rohan Paul and Paul Newman.
Workshop on Lifelong Autonomy and Exploration. International Conference on Robotics and Automation (ICRA), 2011.

[WS2] Leveraging 3D Information for Topological Mapping with Vision and Laser
Rohan Paul and Paul Newman
RGB-D Workshop on 3D Perception in Robotics. European Robotics Forum, 2011.

[WS1] FABMAP 3D: Topological Mapping with Vision and Laser
Rohan Paul and Paul Newman
Mapping with RGB-D Cameras. Robotics: Science and Systems (RSS) Workshop, 2010.

Dissertations

[D2] **D. Phil. Thesis**
Mobile Robotics Group. Department of Engineering Science, University of Oxford, UK
Title: Long Term Appearance-based Mapping with Vision and Laser

[D1] **Dual Degree Thesis**
Department of Computer Science and Engineering, Indian Institute of Technology Delhi, India
Title: Knee-above Obstacle Detection System and User-triggered Bus Identification System for the Visually Impaired.

HONORS

Assistant Professor

Area Chair (AC), International Conference on Robot Learning (CoRL) 2022-2023
First India-based Area chair for the conference

Associate Editor, International Conference on Robotics and Automation (ICRA) Workshops 2023

Early Career Panelist, Conference on Robot Learning (CoRL), USA 2020

Young Systems Scientist Award, Systems Society of India 2023
Recognized for outstanding contribution in Robotics & Intelligent Systems.

Postdoctoral

Best Conference Paper, Robotics Science and Systems (RSS) Conference 2017

MIT Technology Review's Global List of 35 Innovators under the age of 35 (MIT TR35) 2015

Government of India National Award for Best Applied Research aimed at Improving the Life of Persons with Disabilities, [Leading team member] 2015

Best Conference Paper, International Conference on Intelligent Robots and Systems (IROS) 2013

Best Conference Paper, International Conference on Transport and Mobility for the Elderly and Disabled Persons (TRANSED) 2012

Graduate

Associate Fellowship, Skoll Center for Social Entrepreneurship, University of Oxford 2011

Graduate Research Prize, Royal Institute of Navigation (RIN) UK 2012

Light Senior Graduate Scholarship Award, St. Catherine's College, University of Oxford 2011

Bracken Bequest Graduate Student Research Prize, University of Oxford 2010

Best Vision Paper (Finalist), International Conference on Robotics and Automation (ICRA) 2010

Best Conference Paper, International Conference on Transport and Mobility for the Elderly and Disabled Persons (TRANSED) 2010

Bracken Bequest Graduate Research Seminar First Prize, Dept. of Engineering Science 2010

Overseas Graduate Scholarship Award, St. Catherine's College, University of Oxford 2009

The Rhodes Scholarship (one of five distinguished fellowships from India) 2008

Undergraduate

National Award (Student Project), Indian National Academy of Engineering (INAE) 2008

Best Industry Relevant Thesis, Forum for Innovation & Technology Transfer, IIT Delhi 2008

Best Project with Experimental Component (BOSS Award), IIT Delhi 2008

Alumni Association Award, IIT Delhi 2008

Technology Development and Initiation Award for Students, IIT Delhi 2006

School

National Top 1% in Indian National Physics Olympiad 2003

Harivallabh Sangeet Sammelan Pratiyogita (Vocal Classical) National Runners Up Prize 2003

Awarded the Young Astronomer of the Year, Nehru Planetarium Delhi 2001

National Winner, Discovery Channel Quiz, India 1999

Best All Rounder Award (Boys), Sardar Patel Vidyalaya (SPV), Delhi 1999-2001

TEACHING

COL864: Special Topics In Artificial Intelligence Senior UG and PG Course

Theme: Estimation and Planning for Autonomous Systems
Instructor in: Sem-2 2019-20, Sem-2 2020-21, Sem-2 2021-22 and Sem-1 2023-24

COL333: Principles Of Artificial Intelligence 3^{rd}-Year UG Course

Instructor in: Sem-1 2020-21, Sem-1 2021-22 and Sem-1 2022-23

COL671: Artificial Intelligence M. Tech. Bridge Course

Instructor in: Sem-1 2020-21, Sem-1 2021-22 and Sem-1 2022-23

COL100: Introduction To Computer Science 1^{st}-Year UG Course

Instructor in: Sem-2 2022-23

JRL302: Robotics Technology Interdisciplinary Course

Instructor in: Sem-1 2022-23

COQ302: Seminar Course – II UG CSE Course

Instructor in: Sem-2 2019-20

RESEARCH GRANTS: AS ASSISTANT PROFESSOR (OCTOBER 2019 - PRESENT)

Industrial R&D unit, IIT Delhi 2023 - 2024

(PI) Learning Physically Grounded Models for Robot Manipulation from Visuo-linguistic Interactions (Under IRD MFIRP scheme for Collaboration with University of Buffalo, USA), Support: 5 Lakhs.

Industrial R&D unit, IIT Delhi Mar 2023 - Sep 2023

(PI) Equipment Matching Grant to Prof. Rohan Paul, C.S.E., Support: 30 Lakhs

Dept. of Science and Technology, Govt. of India 2022 - Present

(PI) Development of a contextually adaptive travel aid for the visually challenged enabling route navigation, safe mobility and destination identification, Support: 50 Lakhs

Indian Council of Medical Research, Govt. of India 2022 - Present

(Co-PI) ICMR - National Centre for Assistive Health Technology, Support: 15.05 Crores

Ministry of Defence, Govt. of India 2021 - Present

(PI) Development of a Cognitive Model for an Intelligent Robotic Teammate, Support: 4.19 Crores

Ministry of Defence, Govt. of India 2020 - Present

(Co-PI) International Workshop on Intelligent Robot Teammates for Complex Mission in Unstructured Environments during Sponsored by Ministry of Defence, India. Support: 24 Lakhs

Dept. of Science and Technology, Govt. of India 2020 - Present

(PI) Bridging the "Semantic Gap": Human-guided Robot Teaching and Task Execution. Support: 20 Lakhs

RESEARCH GRANTS: BEFORE APPOINTMENT AT IIT DELHI (BEFORE 2019)

Wellcome Trust, UK (Affordable Healthcare in India Initiative) 2014 - Present

(Core Team) Development of affordable Braille display based on Shape Memory Actuation

Wellcome Trust, UK (Affordable Healthcare in India Initiative) 2014 - Present

(Core Team) Development Course for National and International Dissemination of the SmartCane

Dept. of Electronics, Govt. of India 2014 - Present

(Core Team) Center for Excellence in Tactile Graphics

Center for Internet and Society (CIS), India 2013 - Present

(Core Team) Enhancement to NVDA Open-source Screen Reader

Dept. of Science and Technology, Govt. of India (Technology Intervention for Disabled and Elderly Scheme) 2013 - Present

(Core Team) Bus Identification System for the Visually Impaired

Dept. of Science and Technology, Govt. of India (Technology Intervention for Disabled and Elderly Scheme) 2013 - Present

(Core Team) Refreshable Braille Cells based on SMA-based actuation

Wellcome Trust, UK (Affordable Healthcare in India Initiative) 2011 - 2014

(Core Team) SmartCane: Development of an affordable knee-above obstacle detection and warning system for the Visually Impaired

Industrial R&D unit, IIT Delhi 2006 - 2008 2006

Technology Development and Initiation Award for Students (TDP-IAS) Media Labs Asia, Dept. of ICT, Govt. of India

(Core Team) Embedded Assistive Devices for the Visually Challenged

PATENTS

Multiple Range Obstacle Detection and Warning System

Indian Patent Application: 1354/DEL/2007 [Awarded]

Rohan Paul, Vaibhav Singh, Ankush Garg, Dheeraj Mehra, Dipendra Manocha, Kolin Paul, M. Balakrishnan

User Triggered Duo Module Destination Identification System

Indian Patent Application: 1355/DEL/2007 [Under review]

Rohan Paul, Vaibhav Singh, Ankush Garg, Dheeraj Mehra, Dipendra Manocha, Kolin Paul, M. Balakrishnan

A Split Grip Handle Unit with Tactile Feedback for Directed Ranging

WIPO PCT Application: PCT/IN2014/000451 [Under review]

Indian Patent Application: 388/DEL/2014 [Published]

Rohan Paul, Arun K. Venkatesan, Dheeraj Mehra, Piyush Chanana, H. Karthikeyan, K. Bhagavatheesh, V. Sashi Kumar, P. V. M. Rao, M. Balakrishnan

A Compliant Mechanism for Refreshable Braille Display using Shape Memory Alloy

Indian Patent Application: 1575/DEL/2014 [Under review]
Ankit Kumar Parsurampuria, Dhruv Gupta, Pulkit Sapra, P. V. M. Rao, Rohan Paul, M. Balakrishnan

A Multi-modal Infotainment Device for Interactive Braille Learning

Indian Patent Application: 1729/DEL/2014 [Under review]
Ankit Kumar Parsurampuria, Ambrish Rawat, Richa Gupta, Samarth Bahuguna, Rohan Paul, M. Balakrishnan, P. V. M. Rao, Deepak Gupta

PROFESSIONAL SERVICE

Co-Organizer

Workshop on Meta-cognition in the Age of AI, Neural Information Processing Systems (NeurIPS Conference) 2021
International Workshop on Intelligent Robotic Teammates for Complex Missions in Unstructured Environments at IIT Delhi (sponsored by DRDO) at IIT Delhi 2020
Workshop: Acting and Interacting in the Real World: Challenged Robot Learning
Neural Information Processing Systems (NeurIPS) 2017

Program Committee Member

Robotics Science and Systems (RSS) International Conference 2021
Annual AAAI Conference on Artificial Intelligence 2021
Empower – national level Assistive Technology conference in India which originated at IIT Delhi 2019
International Conference on Robotics Science and Systems (RSS) 2018
International Conference on Robot Learning (CoRL) 2017
American Association for Artificial Intelligence (AAAI) Fall Symposium 2017
International Conference on Robotics Science and Systems (RSS) 2017
International Joint Conference on Artificial Intelligence (IJCAI) 2013

National Selection Committee Member

The Rhodes Scholarship for Oxford University 2021
Grand Challenges Joint call by DST, India and Wellcome Trust, UK 2020-2021

Advisory Committee Member

Saksham Trust for Persons with Visual Impairment 2021-2023

Project Review Committee Member

DBT-BMGF-BIRAC-Wellcome Trust Alliance Indida for specific projects 2022-23

Reviewer

Conferences: ICRA, IROS, RSS, IJCAI, CoRL, ISRR, ISER, MESA, AAAI 2008 - Present
Journals: IJRR, JFR, TRO, Autonomous Robots, Transactions on HRI

Student Volunteer

International Symposium on Experimental Robotics (ISER) 2011

Invited Expert

Preliminary Design Committee by DRDO R&D Engineers, Pune and DRDO-CAIR for the National Project on Systems and Technologies for Advanced Robotics (STAR Program) 2021
International Rhodes Scholarship Committee, Rhodes Trust, Oxford, UK 2011 - 2014

Indian Rhodes Scholarship Selection Committee, India 2013
Committee on Assistive Technology, Min. of Social Justice and Empowerment, Govt. of India 2011
Executive Committee on Technology Solutions for Persons with Blindness, Saksham Trust, India 2013
Center for Excellence in Tactile Graphics, IIT Delhi 2014 - Present
Rhodes Social Impact Group (RSIG), Rhodes Trust, UK 2011-2012

INVITED TALKS

Invited Talk at Korea Advanced Institute of Science and Technology (KAIST) School of Computing. 2023

Invited talk at Workshop on Experiment Oriented Locomotion and Manipulation, as part of Robotics Science and Systems (RSS), Korea. 2023

Invited talk at IIT Jodhpur Conference on Next Generation AI Inspiration from Brain Science 2023

Invited talk at Indian Science Congress, Nagpur as part of DRDO Session on Advanced Technolgy. 2023

Invited speaker at Indian Science Festival, Bhopal Seminar 2023

Invited Talk in Conference on AI (ConfAI) at Plaksha University 2023

Speaker at the IIT Delhi visit of University of Buffalo (UB) delegation 2023

Visit to DRDO-CAIR (Centre for Artificial Intelligence and Robotics), Bangalore, India 2023

Invited Talk in the Robotics Seminar (virtual mode) at the Robotics Institute (RI), Carnegie Mellon University (CMU), USA 2021

Invited Talk (virtual mode, School of Computing, Korea Advanced Institute of Science and Technology (KAIST), USA 2021

Invited Talk (virtual mode) at the University of Rochester, USA 2021

Invited Talk (virtual mode), Design and Computing, IIIT Delhi 2021

Seminar Talk, Department of Computer Science and Engineering, IIT Delhi 2021

Two invited Talk on Robotics and AI for Parliamentarians Visiting IIT Delhi 2019 – 2020

Invited Talk, Natural Communication for Human-Robot Collaboration, AAAI Fall Symposium, Washington D. C. 2017

Invited Talk, Robots that Understand Language, Computer Science and AI Lab Industry Affiliate Program, Cambridge 2017

Speaker as TR35 Awardee at EmTech, MIT 2015
https://www.youtube.com/watch?v=tyUF_dWbOjw

TEDx talk, Lal Bahadur Shastri Institute of Management, New Delh 2017
https://www.youtube.com/watch?v=RpEVxMo5xcs

Invited Talk, National Science Center Speaker Series, New Delhi

Seminar, Computer Science and Artificial Intelligence Laboratory (CSAIL), MIT 2014

Speaker and Panelist, UNDP India Social Good Summit 2014

http://bcove.me/xeh5ifr6
http://bcove.me/mojuvxi7

Invited talk, UNESCO International Conference on Role of ICTs for Persons with Disabilities 2014

Speaker, SmartCane: Release to the People Event, IIT Delhi 2014

https://www.youtube.com/watch?v=ltwli5zsTSQ

Invited talk, DAISY Forum of India General Body Meeting 2014

Talk, Capacity Building Session at the Christian Federation of the Blind, Bangkok, Thailand 2014

Workshop speaker, Training Session at the Hong Kong Blind Union, Hong Kong 2014

Seminar, National Innovation Showcase, Rashtrapati Bhavan (Hon'ble President of India's residential estate) 2014

Speaker, Alumni Association Event, IIT Chennai 2014

Speaker, International White Cane Day, Rotary Club of Delhi 2014

Seminar, Guru Nanak Eye Hospital, New Delhi 2014

Workshop Speaker, Jamia Milia Islamia University, New Delhi 2014

Speaker, Launch of Govt. Scheme for Subsidised Devices, Xaviers Resource Center for the Blind 2014

Speaker, Donation Event at National Association for the Blind 2014

Speaker, Introduction to Engineering Speaker Series, IIT Delhi 2014

Speaker and Panelist, International Rhodes 110th Meet, UK - Session: Fighting the World's Fight 2013

http://www.rhodeshouse.ox.ac.uk/speaker-videos

Speaker (Socially relevant technology development), IIT Delhi 2013

Panelist and Session Speaker, Global Scholars Symposium - University of Oxford 2013

Speaker and Panelist, Career in Science and Technology, Sardar Patel Vidyalaya 2013

Speaker, D-Rev Inc., USA 2012

Accessible Science Workshop, Little Flower School for the Deaf and Blind, Chennai 2012

Speaker, Students Forum on Scientific Research, Sardar Patel Vidyalaya 2012

Seminar speaker, e-Research Center, Oxford University 2012

Speaker, Knowledge Center, All India Institute of Medical Sciences, New Delhi 2010