CHINMAYA MISHRA

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Postdoctoral Researcher, Max Planck Institute for Psycholinguistics, Nijmegen

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EDUCATION

Radboud University   *Nijmegen, Netherlands*
International Max Planck Research School   January 2021 - April 2024
Marie Curie PhD Fellow

Technische Universität Kaiserslautern   *Kaiserslautern, Germany*
Department of Computer Science   October 2016 - May 2020
Master of Science in Computer Science, Major in Intelligent Systems
GPA: 1.6

Application Period for Master Studies   *Bhubaneswar, India*
self study and applications for MS   July 2015 - September 2016

Institute of Technical Education and Research   *Bhubaneswar, India*
Siksha 'O' Anusandhan University   August 2008 - April 2012
Bachelor of Technology in Computer Science and Engineering
CGPA: 8.87

Scores:　　General GRE: 311　　TOEFL iBT: 116

PROFESSIONAL EXPERIENCE

Max Planck Institute for Psycholinguistics   *Nijmegen, Netherlands*
Postdoctoral Researcher   January 2024 - Present

- Investigating the effects of robot-exhibited multi-modal cues on human behavior in HRI.
- Studying the interactions between humans and other artificial agents such as robots, 3D Avatars, and VR characters.
- Modelling new control architectures to automate robot's non-verbal behaviors during HRI.

Furhat Robotics AB   *Stockholm, Sweden*
Associate Researcher   January 2021 - December 2023

- Developing and maintaining the platform of the Social Robot Furhat.
- Researching and implementing new features and architectures for the robot.
- As PhD research: focusing on modelling gaze behaviors of Social Robots and their impact in Human-Robot Interaction.

PROAURIS GmbH   *Kaiserslautern, Germany*
Working Student   June 2019 - July 2020

- Developing new functionalities for the current business needs.
- Maintaining the websites and the corresponding databases.
- Extracting statistical data from the database for analysis.

· Brainstorming new IT solutions for current and future business requirements.

Tata Consultancy Services Limited   *New Delhi, India*
Systems Engineer   June 2012 - June 2015

· Worked on the development and maintenance of a PBM (Pharmacy Benefit Management) system for a major US client considered to be one of the most complex systems.
· Backend development on IBM AS/400 to handle claim processing from various pharmacies for individuals.
· Responsible for requirement understanding, feasibility study, effort estimation, analysis and design, client signoffs among others.
· Development work using RPGLE and SYNON tools.

TEACHING EXPERIENCE

Technische Universität Kaiserslautern   *Kaiserslautern, Germany*
Research Assistance   May 2018 - August 2018

· In charge of conducting exercise sessions for the lecture "Applications of Artificial Intelligence" in the summer semester 2018.
· Responsibilities included creating relevant exercises, engaging students in various discussions on the topics mentioned in the lecture and clarification of any doubts the students may have.

PUBLICATIONS

Peer-reviewed

· **Mishra, C.**, Offrede, T., Fuchs, S., Mooshammer, C. & Skantze, G., (2023) *Does a Robot's Gaze Aversion Affect Human Gaze Aversion?*. Frontiers in Robotics and AI, 10, p.1127626.

· Offrede, T., **Mishra, C.**, Skantze, G., Fuchs, S., & Mooshammer, C. (2023). *Do humans converge phonetically when talking to a robot?* in Proceedings of the 20th International Congress of Phonetic Sciences (ICPhS), Prague, Czech Republic.

· **Mishra, C.**, & Skantze, G. (2022, August). *Knowing Where to Look: A Planning-based Architecture to Automate the Gaze Behavior of Social Robots.* In 2022 31st IEEE International Conference on Robot and Human Interactive Communication (RO-MAN) (pp. 1201-1208). IEEE.

· Paplu, S. H., **Mishra, C.**, & Berns, K. (2020, October). *Pseudo-randomization in automating robot behaviour during human-robot interaction.* In 2020 Joint IEEE 10th International Conference on Development and Learning and Epigenetic Robotics (ICDL-EpiRob) (pp. 1-6). IEEE.

· Giridhara, P. K. B., **Mishra, C.**, Venkataramana, R. K. M., Bukhari, S. S., & Dengel, A. (2019). *A Study of Various Text Augmentation Techniques for Relation Classification in Free Text.* ICPRAM, 3, 5.

Pre-print

· Paplu, S.H., Mishra, C. & Berns, K., 2022. *Real-time Emotion Appraisal with Circumplex Model for Human-Robot Interaction.* arXiv preprint arXiv:2202.09813.

INVITED TALKS

. Keynote on *Future Robots: Will they Replace or Reinforce?*, Odias in AI ML Conference 2023, Oct 2023

. Lunch Talk on *Modelling Gaze Behavior of Social Robots & How it Affects HRI*, Max Planck Institute for Psycholinguistics, Nijmegen, April 2023

. Public Talk on *Investigating Gaze Behavior of Social Robots*, 18th Annual ACM/IEEE International Conference on Human-Robot Interaction (HRI 2023), Stockholm, March 2023

. Guest Session on *Human-Robot Interaction: A Perfect Platform for Applied AI*, Symbiosis Institute of Technology, Pune, Oct 2022

. Online public talk on *Building a Planning-based Automated Gaze Control System for Social Robots* in the Psycholinguistics Coffee session, The University of Edinburgh, Jan 2022

. Online public talk on *A Broad Overview of Social Robotics*, CV Talks, Jan 2021

AWARDS & FELLOWSHIPS

. Received the Marie Skłodowska-Curie fellowship as part of the COBRA MSCA ITN Project, 2021.

. Awarded "Star of the Learners Group" for being the best trainee in Tata Consultancy Services initial learning period training, (2012)

. Awarded "On the Spot" award on numerous occasions in Tata Consultancy Services for outstanding contributions in the projects. (2012 - 2015)

. Mini-project in ITER, Bhubaneswar adjudged as one of the best and felicitated by IBM. (2011)

. Awarded Rajya Puraskar (Governor's Award) as a scout. (2004)

. Recipient of numerous awards in singing and drawing competitions.

RESEARCH EXPERIENCE AND PROJECTS

Technische Universität Kaiserslautern, Kaiserslautern　　　　October 2019 - May 2020
Successfully Defended on 04, June 2020　　　　　　　　　　　　**Master's thesis**

· Title: Behavior Based Human-Robot Interaction
· Supervisor: Prof. Karsten Berns, TUK, Kaiserslautern, Germany
· Co-supervisor: Sarwar Hussain Paplu, TUK, Kaiserslautern, Germany
· A behavior control architecture has been developed for ROBIN (Humanoid Robot in RRLab, TUK) as part of this work that is able to perceive and adapt to certain social scenarios. This work builds upon existing behavior based control architectures and enhances them further. Exhaustive research was done to try and transfer the theories from Psychology and incorporate them in Human-Robot Interaction in developing an affective robot which could behave like human beings up to an extent. Formal definitions were proposed on how to interpret the perceived stimuli in the context of a Psychological emotion space model and use the model to appraise and generate relevant behaviors.

Technische Universität Kaiserslautern, Kaiserslautern　　　　April 2019 - August 2019
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· Title: Automatic Generation of Behavior Based On Robot State During Human-Robot Interaction
· Supervisor: Prof. Karsten Berns, TUK, Kaiserslautern, Germany
· Co-supervisor: Sarwar Hussain Paplu, TUK, Kaiserslautern, Germany

· The project was aimed at achieving semi-automated behavior generation. As part of the project, primitive gestures were researched and various illustrations for the same were collected from literature sources. The gestures were incorporated in ROBIN (humanoid robot) and an algorithm was designed to automate the gesture performed for a specific emotion state. Emotion state was manually set and the gesture to be performed was selected in a pseudo-random manner from a group of relevant gestures. A paper was written and submitted to HRI-2020 conference for the same.

Technische Universität Kaiserslautern, Kaiserslautern
April 2018 - August 2018
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Master's Seminar

· Title: Visual Analysis of Clusterings
· Supervisor: Dr.-Ing. Diana Fernandez-Prieto, TUK, Kaiserslautern, Germany
· As part of the master's curriculum, I delivered a seminar presentation on visualization of clustering results. I went though various papers on visualization techniques for clustering algorithms and provided a summary for two papers. One of them introduced a visualization tool called Clustervision which provides a user interface for the users to explore clustering results from different clustering algorithms in an intuitive manner. The other paper discussed about the role of dimensionality reduction algrithms in visualizing clustering results.

Technische Universität Kaiserslautern, Kaiserslautern
May 2018 - November 2018
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Guided Research

· Title: A Study of Various Text Data Augmentation Techniques Over Different Deep Learning Models for Relation Classification in Free Text
· Supervisor: Dr. Saqib Bukhari, TUK, Kaiserslautern, Germany
· Co-supervisor: Prof. Andreas Dengel, TUK, Kaiserslautern, Germany
· As part of the research, we tried to explore various text data augmentation techniques for relation classification tasks. We worked on two public datasets; SemEval2010 and KBP37. We explored 5 text data augmentation techniques with 2 deep learning models; CNN and Attention Based BLSTM. We observed that we were able to mimic the performance of an original dataset by adding augmented data to a small dataset. We were able to publish a conference paper in ICPRAM 2019 titled "A Study of Various Text Augmentation Techniques for Relation Classification in Free Text".

Institute of Technical Education and Research, Bhubaneswar
January 2012 - April 2012
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Bachelor's project

· Title: Knowledge Based Community Sharing System
· Project Guide: Rasmita Rautray, ITER, Bhubaneswar, India
· In order to bridge the gap produced due to bad student-to-teacher ratio in India, we developed a web based platform for students and faculty to interact. We used MVC architecture, Spring and Hibernate Frameworks to implement the system. DB2 was used as the database system. The platform aimed at providing many facilities such as learning by voice and video lectures in the form of webinars and live chats.

Institute of Technical Education and Research, Bhubaneswar
January 2010 - March 2010
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Side project

· Title: University Content Management system
· In order to centralize the contents of various clubs across the university, we developed a PHP based content management system. Specific roles were assigned to users at each level (College Administrator, Dean, Head of Department, Faculty, Student Coordinator, Club Administrator, Students). Portals were provided for different departments and one click website set-up for college clubs was provided. Algorithms were also implemented to detect search patterns and recommend related information.

SKILLS

Computer Languages	C, C++, Python, Kotlin, PHP, RPG
Software & Tools	LaTeX/Overleaf, SYNON, Excel, MATLAB
Languages	Odia (Mother tongue), English, Hindi, German

REFERENCES

Prof. Gabriel Skantze
Professor in Speech Communication and Technology
KTH Royal Institute of Technology, Stockholm
skantze@kth.se

Prof. Karsten Berns
Professor & Head of RRLabs
TUK, Kaiserslautern
berns@informatik.uni-kl.de

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Symbiosis Institute of Technology, Pune
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