Meghal Dani

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Education

2026 (exp.) 🔖 **International Max Planck Research School for Intelligent Systems (IMPRS-IS)**
Ph.D. in Computer Science, University of Tübingen
Supervisors: Dr. Prof. Zeynep Akata and Dr. rer. nat. Stefanie Liebe
Research Interests: Medical AI, VLMs, LLMs, XAI, Neuroscience

2017 – 2019 🔖 **Indraprastha Institute of Information Technology Delhi (IIITD)**
Masters of Technology, Computational Biology, Grade: 9.55/10
Supervisors: Prof. Dr. Richa Singh and Prof. Dr. Mayank Vatsa, IAB@IIT Jodhpur

2012 – 2016 🔖 **Birla Institute of Technology (BIT), Mesra**
Bachelors in Engineering, Computer Science, Grade: 8.47/10

Research Experience

Aug'19 – Aug'21 🔖 **Researcher, TCS Research and Innovation Labs**
Deep Learning and Artificial Intelligence Lab, New Delhi
Worked with Dr. Lovekesh Vig, Ramya Hebbalaguppe on Medical Image Analysis and 3D vision respectively.

Aug'18 – Jul'19 🔖 **Graduate Student Researcher, Image Analysis and Biometrics Lab (IAB)**
IIIT-Delhi (now moved to IIT-Jodhpur)

Research Publications and Patents

1. M. Dani, M. J. Prakash, Z. Akata, and S. Liebe, "Semiollm: Assessing large language models for semiological analysis in epilepsy research," *arXiv preprint arXiv:2407.03004*, 2024.

2. M. Dani, I. Rio-Torto, S. Alaniz, and Z. Akata, "Devil: Decoding vision features into language," in *DAGM GCPR **(Oral)**, Springer, 2023, pp. 363–377*.

3. M. Sheoran, M. Dani, M. Sharma, and L. Vig, "An efficient anchor-free universal lesion detection in ct-scans," in *2022 IEEE 19th International Symposium on Biomedical Imaging (ISBI)*, IEEE, 2022, pp. 1–4.

4. M. Sheoran, M. Dani, M. Sharma, and L. Vig, "Dkma-uld: Domain knowledge augmented multi-head attention based robust universal lesion detection," *BMVC*, pp. 363–377, 2022.

5. M. Sheoran, M. Sharma, M. Dani, and L. Vig, "Handling domain shift for lesion detection via semi-supervised domain adaptation," in *ACCV*, Springer, 2022, pp. 98–112.

6. M. Dani, K. Narain, and R. Hebbalaguppe, "3dposelite: A compact 3d pose estimation using node embeddings," in *WACV*, Springer, 2021, pp. 1878–1887.

7. M. Dani, A. Popli, and R. Hebbalaguppe, "Posefromgraph: Compact 3-d pose estimation using graphs," in *SIGGRAPH Asia*, 2020, pp. 1–4.

8. M. Dani, G. Garg, R. Perla, and R. Hebbalaguppe, "Mid-air fingertip-based user interaction in mixed reality," in *ISMAR*, IEEE, 2018, pp. 174–178.

Awards and Achievements

2023   **IMPRS-IS Scholar:** Tübingen, Germany

2022   **ClinBrAIn PhD Fellowship:** by EKFS, Tübingen, Germany

2020   **Employee Recognition:** Earned an accolade by Prof. Dr. Jeffrey Ullmann for developing an AR project for TCS annual ceremony.

2019   **Best Thesis Award Nominee:** for masters thesis at IIIT-Delhi

2017   **Postgraduate Fellowship:** Received funding from the Government of India

2016   **Hackathon Winner:** Secured 1st position in a 2-day hackathon held at Verizon, Chennai.

2014   **Special Recommendation from IIM-A:** during internship for distinguished effort and outstanding performance.

Other Projects and Patents

2023   **Towards Automatized Analysis of Epileptic Seizure Behavior in VEEG Recordings**
This multi-modal work aims towards pose estimation and trajectory analysis of epilepsy patients.

   Patent: Method and system for domain knowledge augmented multi-head attention based robust universal lesion detection (filed)

2022   **Patent:** Methods and systems for generating end-to-end model to estimate 3-dimensional (3-d) pose of object (filed)

2018   **Masters Thesis: An fMRI Investigation of Autism Spectrum Disorder: Detection and Analysis**
The work quantifies the occurrence of camouflage in female subjects and its effect on their cognitive brain regions.

Skills

Coding Languages   Python, R, MATLAB, SQL, C/C++, Java, HTML, CSS, LaTeX

Tools and Technologies   python, pytorch, keras, OpenCV, HuggingFace, Langchain, Nilearn, scikit-learn, scikit-image

   Linux, Git, bash, inkscape, SLURM, HPC Servers

Workshops and Summer/Winter Schools

2024   **Connecting Minds and Machines** workshop at Helmholtz AI, Munich, Germany

   CyberValley Days, Max Planck Institute for Intelligent Systems and Amazon, Tübingen, Germany

2023   **Bernstein Conference**, Berlin, Germany

   IMPRS-IS BootCamp Tübingen, Germany

   Oxford MLxHealth Summer School Oxford, United Kingdom

Academic Service

   Reviewer at ECCV, MICCAI, ICML, ACCV in 2024 and ICCV in 2023

   Ph.D. Representative in Search Committee for Tenure-Track Professor of Machine Learning and Intelligent Systems.

   IMPRS-IS Interview Symposium Helper involved in recording and moderating candidate talks