Akansh Maurya

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EDUCATION

CISPA Helmholtz Center for Information Security, Saarbrücken, Germany
PhD candidate, Machine Learning, April, 2026 - Present

Universität des Saarlandes, Saarbrücken, Germany
Masters of Science, Visual Computing, April, 2023 - Oct. 2025
GPA: 1.4

Institute of Engineering and Technology, Lucknow, India
Bachelor of Technology, Electrical Engineering,
CGPA: 8.69/10 Sep. 2017 - July 2021

EXPERIENCE

Hiwi & Master Thesis Machine Learning Optimization (MLO) Lab, CISPA
Feb 2025 - Present Saarbrücken, Germany

- Worked with **Dr. Sebastian Stich** on the topic of Collaborative learning for Unpaired Multimodal data and Federated learning for Multimodal data.
- Oral presentation of our work at **REO at EurIPS 2025**.
- Worked intensively on Pytorch Distributed Data Parallel(DDP) for reducing training/experimentation time from 35 hours to 5 hours.

HiWi-Research Assistant I2SC, Societal Computing Lab
April 2023 - Jan 2025 Saarbrücken, Germany

- Collaborated with **Prof. Ingmar Weber** on pioneering Deep Learning methods to detect mobility patterns from low-resolution **satellite images**.
- **Research paper** accepted in the proceedings of the **ICWSM'25** Workshop.
- Build a pipeline to automate the satellite image data collection and pre-processing from PlanetScope using Open Street Map(OSM).
- Developed a method to scrape Google Popular Times to create annotations for parking occupancy of satellite images.

Healthcare Machine Learning Researcher SONY Research India
Sept. 2022 - Feb 2023 Bengaluru, India

- Built **AI-powered** solutions for detecting of Chronic Obstructive Pulmonary Disease(COPD) from Audio data. Prepared clinical **data collection SOW**, Reviewed 12+ vendors.
- Collaborated with IIT KGP for data collection using their novel temperature-based sensor.

Post Baccalaureate Research Assistant Robert Bosch Center for Data Science and Artificial Intelligence
Sept. 2021 - Sept. 2022 IIT Madras, Chennai, India

- Worked with **Dr. Ganapathy Krishnamurthi** to make interpretable weakly-supervised DL algorithms to detect and localize multiple abnormalities in Chest X-rays.

- **2 research papers** accepted at an International conference(**MICCAI 2021 and ISBI 2023**). **1 journal paper** under review at the Nature Communications.
- **Secured 3rd position** in Chest XR COVID-19 detection Grand Challenge among 200 teams.
- **Secured 13th position** in Pulmonary Artery Segmentation Challenge 2022 among 460 participants.

INTERNSHIPS

Research Intern — SPIRE Lab, Indian Institute of Science Banglore
Oct 2020 - May 2021 — Bangaluru, India

- Worked under the guidance of **Dr. Prashanta Kumar Ghosh** to build an app that can help detect an asthmatic patient based on cough sound and sustained phonation.
- Pre-processed 285 patient recordings for feature engineering and calculated statistical features on MFCCs and their derivatives for ML models.

Resarch Intern — Indian Institute of Technology(IIT), Bombay
May 2020 - July 2020 — Mumbai, India

- Under the supervision of **Prof. Kavi Arya**, I developed a Deep Learning-based web app that automates verifying and validating ID card images; it reduced the processing time from **14 days to 3 hours.**
- Developed a RotateNet model that corrected orientated images, improved OCR results on rotated images, implemented text detection and recognition system, and got 27 fps speed to process images.

Publications Google Scholar

T. Aidoo, T. Koebe, A. Maurya, H. Shrestha, and I. Weber, 'A Weak Supervision Learning Approach Towards an Equitable Mobility Estimation', To Appear **ICWSM'25**.

MauryaA. , C. K. Agnes, B. K. Baloch, S. S. Anwari and U. Butt, "Spatial-Economic Analysis for Optimal Electric Vehicle Charging Station Placement," IEEE SASI-ITE 2024.

Maurya A., Krishnamurthi G. et al. (2022). "PARSE challenge 2022: Pulmonary Arteries Segmentation using Swin U-Net Transformer(Swin UNETR) and U-Net" (**ISBI 2023**

Shambhat V, **Maurya A.**, Krishnamurthi G. et al. (2021). "A study on Criteria for Training Collaborator Selection in Federated Learning." (**MICCAI BrainLes 2021**)

COMPUTER SKILLS

Programming Languages: Python, MATLAB, C, C++
Technologies/Frameworks: Linux, GitHub, **Computer Vision**, Deep Learning, Audio Processing, Time-series Analysis, LaTeX
Python Libraries: Pytorch, TensorFlow, OpenCV, Robot Operating System(ROS), Numpy, Matplotlib, Pandas, Librosa.

LANGUAGES

English(C1, TOEFL 105, GRE 315), Hindi(Native), German(A1.2)

VOLUNTEER

Served as Floor representative in my student dormitory, I conducted 3 events to make international students bond. (June 2024- Present)

Served as student join secretary at the Electrical Engineering Society, IET Lucknow. Organized 5 research talks and 2 technical workshops.

Served as academic assistant at PARMARTH-social club of IET Lucknow, I taught children from slums and conducted cloth and food distribution.

Interests Chess(ELO 1486), Tennis, Table Tennis, Badminton, Volleyball, Cricket, and Kho-kho.

References

- Dr. Ingmar Weber, Alexander von Humboldt Professor in AI at Saarland University
- Dr. Ganapathy Krishnamurthi, Associate Professor at IIT-Madras