Daksh Daksh

PhD Candidate, MPIP Mainz, Germany
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EDUCATION

Max Planck Institute for Polymer Research, Mainz, Germany
PhD Computer Science Oct 2021 – present
Advisor: Prof. Katharina Landfester & Dr. Ingo Lieberwirth

National Forensic Sciences University (AIR – 159 in Computer Sciences), Gandhinagar, India
MS - Forensic Nanotechnology (Nano-engineering) Jul 2014 – May 2016
Graduated in First class with Distinction

Lovely Professional University, Phagwara, India
B.Tech (Honors) Computer Science & Engineering Jul 2008 – May 2012
Graduated in First class with Distinction

Research Experience

PhD Researcher & affiliated with CRC 1066, MPIP Mainz 2021 – Present

- Working on automated image registration for correlative microscopy using deep learning.
- Developed Python tool for training free multi-modal image registration of light and electron microscopy and supervised image preprocessing tool for generating the precised image-pair.
- Worked on deep Learning for image analysis and microscopy data analysis using Machine Learning e.g. for generation of super resolution microscopy images

Web group Coordinator, Max Planck PhDnet, MPG 01/2023 – 01/2025

- Development and maintenance of the PhDnet website and mailing lists.

Research fellow in CSIE & IEO dept., NTNU, Taiwan 05/2018 – 07/2020
Jointly worked on project with NVIDIA AI Tech, Taiwan

- Worked on optical defect detection using supervised deep learning for Digital Holography.
- Worked on data Augmentation using GAN i.e. AC-GAN and DC-GAN and for Deep Learning Based on Digital Holograms.
- Worked on deep Learning for image analysis and generating different holographic image datasets.

Scientific Co-worker, University of Greifswald, Germany 06/2017 – 02/2018

- Worked on computational modeling and simulations for bio-molecules.

Setup configuration specialist, Aon Hewitt Pvt. Ltd., India (got selected among 5000 students & even before final semester) 11/2012 – 07/2014

- Worked on IBM mainframes, Lotus notes, C++, ASP .net (C#), VB, and SQL

Conferences

Multi-resolution Cross-modality Image Registration Using Unsupervised Deep Learning Approach. D Daksh, A Kaltbeitzel, K Landfester, I Lieberwirth
Microscopy and Microanalysis: Microscopy Society of America 2023

Unsupervised Deep Learning approach for image registration in Correlative Microscopy for the localization of Nanoparticles. D Daksh, A Kaltbeitzel, G Glaßer, I Lieberwirth, K Landfester
Invited Speaker, BIO Web of Conferences. European Microscopy Congress 2024

Correlative Microscopy Strategies for the Identification of Intracellular Nanoparticles and their Cellular Processing. I Lieberwirth, S Han, A Kaltbeitzel, G Glaßer, D Daksh, K Landfester
Microscopy and Microanalysis: Microscopy Society of America 2024

Patent

Multimodal Training-Free Registration Using Mutual Image Information.
Application submitted.
Software tool & licensing with Max Planck Innovations.

Symposium & Summer schools

Microscopy data analysis: machine learning and the BioImage Archive. EMBL Heidelberg, Germany May 2022
First EMBL Imaging centre Symposium: Enabling imaging across scales. EMBL Heidelberg, Germany May 2022
Oral short talk
SFB 1066 and 1278 Joint Summer school. Fulda, Germany July 2022
Poster Presentation
Joint Symposium of RMaP and SFB 1066. Mainz, Germany July 2022
Poster Presentation
EMBO workshop: from Cryo-EM to multi-scale modelling. EMBL Heidelberg, Germany February 2023
Poster Presentation
Deep Learning & computer vision (DLCV) school. Genova, Italy June 2023
Selected among 1% with full scholarship to attend. Won the first prize for the most novel idea and best presentation.
Joint Symposium of SFB1066 and TRR319. Mainz, Germany April 2024
Poster Presentation
Internal Symposium of SFB 1066. Mainz, Germany July 2024
Poster Presentation
International Symposium of SFB 1066. Mainz, Germany January 2025
Poster Presentation

Certificates

Optimizing writing strategies. MPIP Mainz, Germany feb. 2024
German B1. In-house course in MPIP Mainz, Germany Sept. 2024
Python for HPC. MPCDF Garching, Germany Nov. 2024
Parallel Computing With Matlab. MPCDF Garching, Germany Dec. 2024
Workshop on AI and Research in MPG. Berlin, Germany Dec. 2024

Skills

Programming Languages & Tools: Python, PyTorch, Pandas, Anaconda navigator with different IDEs, Matlab, Napari, ImageJ, Bash, Git, LaTeX, TensorFlow, Scikit-learn, Scipy, Numpy
Languages: English (fluent), Hindi (native), German (B1), French (beginner)