

# Omprakash Chakraborty Google PhD Fellow

## Research Interests:

Computer Vision (Action Recognition, Domain Adaptation, Vision and Language based multi-modal Learning)  
Deep Learning (Efficient learning, Learning with limited labels and Limited compute resources)

## Education:

PhD, Department of Artificial Intelligence(2019-2024) Indian Institute of Technology Kharagpur Thesis Topic: Efficient Deep Learning towards Visual Scene Understanding Guide: Prof. <i>Abir Das</i> , Department of Computer Science and Engg., IIT Kharagpur	
MS, Computer Science and Engineering(2015-2018) Indian Institute of Technology Kharagpur Topic: Multi-Criteria based Network Analysis for Disaster Mangement Guide: Prof. <i>Soumya K. Ghosh</i> , Department of Computer Science and Engg., IIT Kharagpur Prof. <i>Pabitra Mitra</i> , Department of Computer Science and Engg., IIT Kharagpur	9.44/10
B.Tech in Information Technology(IT)(2011-2015) Haldia Institute of Technology, Haldia, West Bengal University of Technology	8.67/10
Higher Secondary Examination (2009-2011) Kendriya Vidyalaya, Haldia, West Bengal CBSE-AISSCE	89.4 %
Secondary Examination (2008-2009) The Assembly Of God Church School, Haldia, West Bengal ICSE	93 % (best of 5)

## Selected Publications:

- XPL: A Cross-Model framework for Semi-Supervised Prompt Learning in Vision-Language Models**,  
*O Chakraborty*, Aadarsh Sahoo, Rameswar Panda, Abir Das  
Transactions on Machine Learning Research (TMLR), 2024.
- AnyDA: Anytime Domain Adaptation**,  
*O Chakraborty*, Aadarsh Sahoo, Rameswar Panda, Abir Das  
International Conference on Learning Representations (ICLR), 2023.
- Semi-Supervised Action Recognition with Temporal Contrastive Learning**,  
*O Chakraborty*, *Ankit Singh*, Ashutosh Varshney, Rameswar Panda, Rogerio Feris, Kate Saenko, Abir Das  
Computer Vision and Pattern Recognition (CVPR), 2021
- Multi-facilities based Road Network Analysis for Flood Hazard Management**,  
*O Chakraborty*, P Mitra, S K. Ghosh  
Journal of Spatial Science, 2019
- Multi-objective based road-link grading for health-care access during flood hazard management** ,  
*O Chakraborty*, Yeshwanth V, P Mitra, S K. Ghosh  
International Conference on Computational Science and Its Applications(ICCSA), 2018
- A Multi-objective Framework for Assessment of Road Network Vulnerability and Facility Location for Flood Hazard**,  
*O Chakraborty*, A Das, A Dasgupta, P Mitra, S K. Ghosh, T N. Mazumdar  
Transactions in GIS, 2017
- A Geospatial Service Oriented Framework for Disaster Risk Zone Identification**,  
*O Chakraborty*, J Das, A Dasgupta, P Mitra, S K. Ghosh  
International Conference on Computational Science and Its Applications(ICCSA), 2016

## Selected Past Projects:

- (a) **Efficient Adaptation of VLMs in a dynamic setting** (*Aug'23 - Dec'23*)  
Research Internship Project under the guidance of **Prof. Bernard Ghanem**, (KAUST)
- Applying parameter-efficient transfer learning methods on an otherwise frozen VLM to finetune for downstream tasks in a dynamic setting.
  - Vary the depth and breadth of VLMs by scaling the number of layers and attention heads while recompensating the losses using efficient tuning strategies.
- (b) **Integrated Information System and Knowledge Discovery Platform for ONGC (IIS)** (*June'18 - Jun'19*)  
Project under **J. C. Bose Fellowship** Scheme, under the guidance of Prof. P. P. Chakrabarti, Prof. Jiaul H. Paik and Prof. Sudeshna Sarkar, IIT KGP
- Machine learning paradigms to aid various inference modules and evaluation policies for diverse seismic and oil extraction processes.
  - Self-Learning aids Knowledge Graph and Workflow development towards efficient distributed data management
- (c) **Multi-criteria based network analysis for disaster management** (*June'15 - Jun'18*)  
MS research work, under the guidance of Prof. Soumya K. Ghosh and Prof. Pabitra Mitra, IIT KGP and Prof. T. N. Mazumdar, in collaboration with Dept. of Architecture IIT KGP
- Analysis of spatial vulnerability of facility access links along with citizen mobility
  - Suitable facility-location prediction for efficient service provisioning during flood hazards

## Experience:

Aug'23 - Dec-'23	<b>Research Intern</b> at King Abdullah University of Science and Technology ( <b>KAUST</b> ) under <b>Prof. Bernard Ghanem</b>
Dec'19 - Oct'24	<b>Teaching Assistant</b> for Deep Learning(DL) with 70+ students for every semester in which the course was offered
Jun'16 - Oct'24	<b>Teaching Assistant</b> for Programming and Data Structure(PDS), with 90+ students for every semester in which the course was offered
Jun'18 - June'19	<b>Junior Research Fellow</b> at Department of Computer Science and Engg., IIT Kharagpur.
Jun'15 - June'18	<b>Junior Research Fellow</b> at Department of Computer Science and Engg., IIT Kharagpur.
Dec'16 - Jun'17	<b>Teaching Assistant</b> for Relational Database Management Systems(RDBMS) with 90+ students

## Awards and Achievements:

- (a) Recipient of the prestigious [Google PhD Fellowship](#)
- (b) Recipient of the **Nasscom AI Gamechangers Award 2023-24**
- (c) Recipient of the **INSC Young Researcher Award 2023**
- (d) Joint Runner's Up for **ACM Kolkata Chapter Best BTech (CS/IT) Dissertation Award**
- (e) **Topper of I.T. Department**, from 6<sup>th</sup> semester onwards (W.B.U.T.).

## Workshops Organized:

- The *Dynamic Neural Networks Meets Computer Vision* Workshop, CVPR ([2021](#), [2022](#)).
- Conducted yearly workshops on Geospatial Data Modeling, Registry Services and Mobile Apps for GI Application for Government Officials from sixteen National Agencies - Worked with a team of 6, and headed the GIS based Registry Service Development Session (July 2016). Organized an earlier phase of the same workshop in March 2016

## Professional Services:

- Reviewer for IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), Association for the Advancement of Artificial Intelligence (AAAI), Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP)

## Extra Curricular Activities:

- Won many medals in various sports events which include basketball and athletics.
- Active part in Anti-Ragging Committee.
- Interested in singing and other music related activities.