

Kiran Purohit

Homepage: kiranpurohit.github.io
Email: kiran.purohit789@gmail.com
LinkedIn: [kiranpurohit789](https://www.linkedin.com/in/kiranpurohit789)
[Github](#), [Google Scholar](#), [DBLP](#)

RESEARCH AGENDA

Application of Subset Selection in Robust and Efficient Machine Learning: My research focuses on developing subset selection methods to make ML models efficient and robust while achieving performance comparable to full sets. These techniques identify the most representative elements, reducing computational demands and eliminating potentially harmful or redundant elements that could degrade model performance.

EDUCATION

IIT Kharagpur

Ph.D. Scholar, Computer Science & Engineering

Supervisor: Prof. Sourangshu Bhattacharya

West Bengal, India

2020–2025

NIT Durgapur

M.Tech, CGPA: 9.15/10

West Bengal, India

2018–2020

PUBLICATIONS

- [1] **K. Purohit**, S. Das, S. Bhattacharya, and S. Rana, “A data-driven defense against model poisoning attacks on federated learning”, in *European Conference on Artificial Intelligence (ECAI)*, 2024.
- [2] **K. Purohit**, A. Parvathgari, and S. Bhattacharya, “A greedy hierarchical approach to whole-network filter- pruning in cnns”, in *Transactions on Machine Learning Research (TMLR)*, 2024.
- [3] **K. Purohit**, Venkatesh, Raghuram, Krishna, Sourangshu, and Avishek, “Explora: Efficient exemplar selection for complex reasoning”, in *Empirical Methods in Natural Language Processing (EMNLP)*, 2024.
- [4] **K. Purohit**, Anurag, Soumi, and Sourangshu, “Accurate and efficient channel pruning via orthogonal matching pursuit”, in *International Conference on (AI-ML Systems)*, 2023, ISBN: 978-1-4503-9847-3.
- [5] **K. Purohit**, A. Kesarwani, D. R. Kisku, and M. Dalui, “Covid-19 detection on chest x-ray and ct scan images using multi-image augmented deep learning model”, in *International Conference on Mathematics and Computing (ICMC)*, Springer Nature Singapore, 2022, pp. 395–413, ISBN: 978-981-16-6890-6.
- [6] A. Kesarwani, **K. Purohit**, M. Dalui, and D. R. Kisku, “Measuring the degree of suitability of edge detection operators prior to an application”, in *Applied Signal Processing Conference (ASPCON)*, 2020.

ONGOING WORKS

- A Challenger Sampling-based top-m Arm Identification for In-Context Exemplar Selection (submitted)
- The Power of Noise: Data Mixing in RAG For Complex QA
- Backward Elimination for pruning of Transformers

TECHNICAL SKILLS

- **Programming Languages:** Python, C, C++, Java, PHP, ASP, C#, HTML, CSS
- **Frameworks:** Pytorch, Tensorflow, Keras, spacy, nltk, scikit-learn, Pandas, Numpy, Matplotlib

SCHOLARSHIPS & AWARDS

- Selected to attend Google DeepMind Research Symposium 2025
- Selected to attend ACM Pingala Interactions in Computing (PIC) 2025
- Won second price at IBM Maitreyee Research Showcase 2024
- Invited to attend Amazon Research Days (ARD) in India 2024 & 2021
- Selected to attend ACM India Grad Cohort 2024
- AI4ICPS Chanakya PhD Fellowship 2024–2025
- Institute Fellowship for PhD 2020–2025
- MHRD Gate Scholarship 2018–2020
- BSF Director General's Merit Scholarship 2013–2014
- Prime Minister's Scholarship Scheme for CAPF & Assam Rifles 2013–2017

POPULAR / NEWS ARTICLES / MEDIA COVERAGE

- Our covid work got enlisted in [Centers for Disease Control & Prevention under US Department of Health](#).
- Our covid work was featured in daily newsletter of [Department of global health, university of washington](#).

TEACHING ASSISTANT

- **TA** for Virginia Tech-IIT KGP Joint Certification Program In Business Analytics and AI 2023-2024
- **TA** for AICTE QIP PG Certificate Programme for Core Engineering Faculty 2024
- **TA** for Scalable Data Mining (CS60021) at IIT Kharagpur Autumn 2024, 2023, 2022 & 2021
- **TA** for Software Engineering Lab & Theory (CS29202) at IIT Kharagpur Spring 2024 & 2023
- **TA** for Foundations of Algorithm Design and Machine Learning (CS60020) at IIT Kharagpur Spring 2022

PROJECTS

- [Course Content Management System \(CCMS\)](#) (2017)
Worked on this project in B.Tech using Front End-PHP & Back End-MySQL
It provides framework for teaching and management of online course content.
- [SeasonsWay: Shopping Site](#) (2016)
Worked on this Project in B.Tech using Front End-JSP & Back End-MySQL
A shopping website that is mainly for the locals of Tehri and Baurari.
- [Network Docket Management System](#) (2016)
Worked on this Project at **DRDO** using Front End-ASP & Back End-Oracle
Generates a distinct docket number for every complaint registered with date.

EXTRACURRICULAR ACTIVITIES

- English Debate, English Essay Writing, Hindi Extempore Speech, Quiz Competition, Science Quiz Competition, Sanskrit Shloka Recitation, Calligraphy, Hindi Essay Writing, Mono Acting and Group Song.
- Yoga, Swimming and Table Tennis enthusiast

REFERENCES

References will be provided on request.