# Dhananjay Kumar

IIT Kharagpur, West Bengal, India

Mobile No.: + 91-7407623322

E-mail : djsingh00@gmail.com

Website: `https://djasingh.github.io/`
LinkedIn: `www.linkedin.com/in/singh-dj`

## Education

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|---|---|
| 2017-Present | **Ph.D. in Text and Network Mining From COEAI Department.** <br> Indian Institute of Technology, Kharagpur, India <br> Course Work (CGPA) : 9.00 |
| 2017 | **M.Tech in Multimedia Information Processing** <br> Indian Institute of Technology Kharagpur, India <br> M.Tech CGPA : 8.46 |
| 2011 | **Bachelor of Engineering in Computer Science** <br> University Of Mumbai, Maharastra <br> B.E. Percentage : 63 |
| 2006 | **Higher Secondary School Certificate, Central Board of Secondary Education** <br> Gyan Bharti Residential Complex, Gaya, Bihar <br> Percentage : 71 |
| 2004 | **Secondary School Certificate, Central Board of Secondary Education** <br> Gyan Bharti Residential Complex, Gaya, Bihar <br> Percentage : 69 |

## Technical Skills

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| Programming Languages | Python, C |
| Libraries & Frameworks | NLTK, Spacy, Gensim, Pandas, Numpy, Scikit-learn, SciPy, TensorFlow, PyTorch, Scrapy |
| Operating Systems | Linux (Preferred), Windows |
| Code Editor | Visual Studio Code, Jupyter, VIM |

## Projects

### PhD Projects

1. **Researcher influence prediction using Academic genealogy graph**, In this article, we proposed the task of Researcher Influence Prediction (ResIP) to predict researchers' future influence in an academic field through the analysis of the corresponding academic genealogy network. To address the ResIP, a number of end-to-end deep learning architectures have been proposed in the current work. The proposed architectures take as input the lineage graph of a researcher at a given time point and predicts the growth of his/her family in future time points.

2. **On the Banks of Shodhganga: Analysis of the Academic Genealogy Graph in an Indian ETD Repository**, In this paper, we studied the academic genealogy graph/network (AGN) in Shodhganga which is the Indian Electronic Theses and Dissertations (ETD) database. We have disambiguated the names of the researchers in Shodhganga and constructed the Shodhganga-AGN, which we have analyzed with topological metrics proposed in the literature on general graphs as well as that on genealogy networks.

3. **Tracing the Evolution of Research Topics in an Academic Genealogy Graph**, The objective of the study was to investigate the impact of shifting research topics on the output of a research group.
4. **Computational fact validation from knowledge graph using structured and unstructured information**, In this work, our primary focus was to leverage unstructured information along with structured ones. Our approach considers finding evidence from Wikipedia and structured information from Wikidata, which helps in determining the validity of the input facts (Triple statements).

[M.Tech Major Project]

1. **Learning to classify problems into cognitive domains**, We used supervised learning approach to classify problems from different courses of Engineering domains to Bloom'S Cognitive levels.

[M.Tech Minor Project]

1. **Automatic MCQ generation through DBpedia**, Generating stem key and detractors by querying DBpedia and using NLP to generate multiple choice question's.
2. **Travel Assistance Application**, Task was to develop a application where traveller searches for a city in google map. After selecting the city in the map, the traveller is provided with information about important places(e.g, monuments museum, hotels, airports etc.).

## Area of Research Interest

1 Natural Language Processing
2 Graph Representation Learning
3 Deep Learning/Computer Vision/Large Language Models

## Publications

1 Saransh Khandelwal and Dhananjay Kumar. 2020. Computational Fact Validation from Knowledge Graph using Structured and Unstructured Information. In Proceedings of the 7th ACM IKDD CoDS and 25th COMAD (CoDS COMAD 2020). Association for Computing Machinery, New York, NY, USA, 204–208. DOI:https://doi.org/10.1145/3371158.3371187

2 Dhananjay Kumar, Plaban Kumar Bhowmick, Jiaul H Paik, Researcher influence prediction (ResIP) using academic genealogy network,Journal of Informetrics,Volume 17, Issue 2,2023, 101392,ISSN 1751-1577, https://doi.org/10.1016/j.joi.2023.101392.

3 Kumar, D., Bhowmick, P. K., Dey, S., & Sanyal, D. K. (2023, May 18). On the banks of Shodhganga: analysis of the academic genealogy graph of an Indian ETD repository. Scientometrics. https://doi.org/10.1007/s11192-023-04728-z

## Certifications

1 Generative AI with Large Language Models from Coursera
2 Complete Guide to TensoFlow for Deep Learning with Python from Udemy.
3 Advanced Web Scraping with Python using Scrapy & Splash from Udemy.

## Other Activities

1 Finalist of Machine Learning Hackathon Theme in Techgig Codegladiators 2023.
2 Finalist of International Data Analysis Olympiad 2022 Competition.
3 Gate Qualified CS with AIR 421.