

Dhananjay Kumar

Indian Institute of Technology Kharagpur

Kharagpur, West Bengal, India

Mobile No.: + 91-7407623322

E-mail : djsingh00@gmail.com



Education

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

Technical Skills

- Programming Languages Python, C
- Operating Systems Linux (Preferred), Windows
- Code Editor Visual Studio Code, Jupyter Notebook, VIM

Projects

Ph.D. Work

- 1. Computational fact validation from knowledge graph using structured and unstructured information**, Given a Knowledge Graph, a knowledge corpus, and a fact (triple statement), the goal of fact-checking is to decide whether the fact or knowledge is correct or not. Existing approaches extensively used several structural features of the input Knowledge Graph to address the mentioned problem. 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.
- 2. Researcher influence prediction using Academic genealogy graph**, Academic influence refers to the ability of a researcher to pass on her/his "academic gene" in future researchers. In this article, we propose 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.

3. **On the Banks of Shodhganga: Analysis of the Academic Genealogy Graph in an Indian ETD Repository**, In this paper, we study 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.
4. **Tracing the Evolution of Research Topics in an Academic Genealogy Graph**, The objective of the study is to investigate the impact of shifting research topics on the output of a research group. We selected researchers from the Mathematics Genealogy Project, (MGP) that constitutes more than 250K researchers. We gathered data on publications, citation, and H-index from different sources, which are reliable measures of research performance and output of the researchers/groups. After that we created researcher groups and then trained a topic model to examine how the topic distribution of a research groups has changed over time.

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 (NLTK, SPACY, Stanford CoreNLP, GENSIM)
- 2 Deep Learning (TensorFlow, PyTorch, scikit-learn)
- 3 Graph Representation Learning (PyTorch Geometric)

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>

Other Activities

- 1 Attended and presented in CoDS-COMAD 2020 conference organised in Hyderabad.
- 2 Participated in IDAO 2022 (International Data Analysis Olympiad) competition