

Prateek Tiwari

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RESEARCH PROFILE

I am a Research Associate (Pre-Doctoral) at the Indian School of Business (ISB), working with Prof. Deepa Mani on research at the intersection of technology and work. I develop large-scale data infrastructures and empirical methods using Natural Language Processing (NLP), transformer models, and Large Language Models (LLMs) to study how Artificial Intelligence (AI) and digital platforms reshape jobs, skills, and organizational learning. My broader interests include human-AI interaction and information systems, with a focus on policy and organization relevant evidence.

EDUCATION

International Institute of Information Technology (IIIT-B) <i>PG Diploma in Data Science (Deep Learning Specialization)</i>	Bengaluru, India 2021 - 2022
Indian Institute of Petroleum and Energy (IIPE) <i>Bachelor of Technology in Petroleum Engineering</i> - Graduated among the top 10 students in the department. - Admitted through the JEE Advanced (2016), ranking in top 7% of the JEE Mains qualified candidates nationwide.	Visakhapatnam, India 2016 - 2020

RESEARCH & PROFESSIONAL EXPERIENCE

Indian School of Business (ISB) <i>Research Associate (Pre-Doctoral)</i>	Hyderabad, India Dec 2023 – Present
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Primary Research Projects

- Worked on creating a high-frequency database for India, by developing an AI-Machine Learning (ML) pipeline to extract and standardise job postings across geographies, enabling scalable and granular workforce analytics.
- Developed a skill ontology and knowledge network from the jobs by integrating structured LLM-based extraction engine with Neo4j graph and created algorithms to align taxonomies from O*NET, NCO, NIC, and Lightcast.
- Validated and refined embedding based mapping and entity disambiguation techniques to improve skills and tasks standardization, enhancing coverage and precision for downstream analysis.
- Assisted in integrating unit-level survey data, the PLFS, with the job postings database to assess representativeness across occupations, industries and geographies. Also constructed wage distributions to perform robustness checks and evaluate alignment between demand and supply side labour market indicators.
- Synthesized research findings into scholarly and policy outputs with [Prof. Deepa Mani](#) (ISB) and created initial drafts for government grant proposals.

Additional Research Projects

- Assisted early stage data sourcing and exploratory analysis, estimating gender bias in Academia with [Prof. Aditya](#) (UT-Dallas) and [Prof. Vasundhara](#) (ISB), contributing to study design and visualization.
- Investigated geographic and geopolitical representation biases in LLMs using frameworks such as *Dataset Geography*, *GPPF*, and *GeoMLAMA* and evaluated the feasibility of IP-based geolocation for spatial bias detection.

Contributions to School Interventions

- Worked closely with ISB Career Advancement Services to translate research findings into curricular interventions for the graduate programs by mapping skill demand across roles, industries, and cohorts.
- Standardized, integrated, and validated institutional databases across admissions and program-analytics frameworks, improving data reliability and operational efficiency for institutional reporting and program design.

Tata Consultancy Services (TCS) <i>System Engineer</i>	Riyadh, Saudi Arabia (Onsite Deputation) Jul 2021 – Dec 2023
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- Contributed to a large-scale digital-transformation program for a leading Middle-East telecom client; recognised with a Performance Excellence Award (2023).
- Applied ML and NLP pipelines to Customer Relationship Management (CRM) datasets to extract product and customer insights, which directly helped in informed product development decisions.
- Automated data workflows using VBA and SQL tools, reducing processing time and improving accuracy. These measures contributed to a 44% reduction in time-to-market and a 20% increase in implemented change requests.
- Worked in a fast track Oracle CRM team, which was awarded "Best Team" for two consecutive years (2022, 2023).

WORKING PAPERS

The Indian Skills Database and Taxonomy

with Prof. Deepa Mani and Dr. Nishant Chadha — Draft in Preparation

- Constructed a national scale, labour market dataset and accompanying taxonomy framework using LLM and NLP-based extraction and aligned occupations and skills across NCO, NIC, and Lightcast classifications. The core methodological approach was presented at the *Conference on the Digital Economy (CODE)*, 2025.

When Skills Go Unsaid: AI Adoption and the Articulation of Skills in Job Postings

with Prof. Deepa Mani and Dr. Nishant Chadha — Draft in Preparation

- Examined how AI adoption reshapes the articulation of skills in job postings. The empirical framework treats job advertisements as organisational communication artefacts and decomposes skill articulation into extensive and intensive margins using two-part, fractional response, and semantically matched models on a national-scale dataset.

BOOK CHAPTER

Sports Matter

with Prof. Deepa Mani — Book Chapter (Forthcoming)

- Co-authored an invited book chapter in *Rules of the Game*, contributing empirical analysis and data-driven insights to support the chapter's core arguments.

RELEVANT COURSEWORK

- **PhD (FPM) Credited Courses (ISB)**: Econometrics A (Grade: 3.5/4), Econometrics B (Grade: 4/4)
- **Graduate (IIIT-B)**: Data Toolkit, Machine Learning I & II, Deep Learning (Specialization Course)
- **Undergraduate (IIEP)**: Probability & Statistics, Numerical Methods, Design of Experiments, Data Analytics & AI for Process Industry, Economics, Project Engineering and Management

CONFERENCE PRESENTATION

- **Tiwari, P.**, Mani, D., Chadha, N., & Garimella, P. (2025, Jan). *Bridging Skill (Data) Gaps: Methodology and Results for an Indian Software Skills Database*. Presented at CODE (Varanasi).([abstract](#))

ACADEMIC ENGAGEMENT & SERVICE

- ISB Data Science Summit, Hyderabad, Nov 2024 & Oct 2025.
- Analytics Convergence Workshop (JP Morgan Chase & IIDS), ISB Hyderabad, Oct 2025.
- ISB - Production and Operations Management (POMS) Workshop , ISB Hyderabad, Jul 2025.
- Data Users Conference (NSO, MoSPI & ISB), Hyderabad, May 2025.
- Volunteer, *Workshop on Information Systems and Economics (WISE)*, Hyderabad, Dec 2023.
- Volunteer, *Workshop on Information Technologies and Systems (WITS)*, Hyderabad, Dec 2023.

ACADEMIC PROJECTS

Caption Generation Model using Flickr8K Dataset

2021

International Institute of Information Technology, Bangalore

([code](#))

- Developed an encoder-decoder attention model to generate image captions for visually impaired users, evaluated via BLEU score (0.67).

Impact of Crises on Global Oil Prices

2020

Indian Institute of Petroleum and Energy, Visakhapatnam

- Conducted statistical analysis to examine how global crises such as COVID-19 affected oil price volatility.

RESEARCH METHODS & TECHNICAL SKILLS

Empirical Methods: Econometrics (OLS, IV, Panel, DiD)

Software/Language Proficiency: Python, R (basics), SQL, Stata, and LaTeX.

Tools/Databases/Libraries: Matplotlib, Seaborn, Tensorflow, Keras, scikit-learn, statsmodels, PyTorch, Selenium-Webdriver, BeautifulSoup, Flask, Matlab (basics), Oracle DB, Siebel CRM, Neo4J, GCP