

Vaibhav R. Sheth

Department of Computer Science & Engineering
Indian Institute of Technology, Kanpur

✉ vaibhavsheth933@gmail.com / 📞 +91-75672 78939
🌐 Portfolio / 📄 Vaibhav2501 / 📷 VaibhavSheth

EDUCATION

Year	Degree/Certificate	Institute	CPI/%
2023-Present	M.Tech/Computer Science & Engg.	Indian Institute of Technology, Kanpur	8.0/10
2019-2023	B.E/Computer Engg.	Gujarat Technological University	9.42/10
2019	GSEB(XII)	Divine Life School, Ahmedabad	87.0 %
2017	GSEB(X)	Divine Life School, Ahmedabad	83.17 %

WORK EXPERIENCE

Promount Technologies LLP, Ahmedabad | Software Developer Intern (Feb'23 - May'23)

- Vendor Audit System is a web-based application that aims to streamline and automate vendor audit process for companies.
- Contributed to the development of the **Vendor Audit System** as a **Front-end** developer using **ReactJS**.
- Participated in planning and requirement gathering, and designed a Process Flow Diagram for the project.
- Tech Stack:** ReactJS, Java Spring Boot, PostgreSQL.

MTECH THESIS/ RESEARCH WORK

AI / ML Applications Across Systems Engineering Associated with Wabtec India Industrial Private Limited (May'24 - Present)
Guide: Prof. Subhajit Roy

- Converting requirement specifications to meet **INCOSE compliance standards** with **NLP Techniques**. Enabled the use of **DSL** for multiple applications, including **INCOSE compliance templates**, **document comparison**, and **flowchart generation**.
- Generated DSL, corrected syntax errors, and fixed semantic errors with the help of **LLaMa LLM**. Transition the current pipeline into the **LangChain & LangGraph** framework. Utilize **LangChain** agents and **tools** for the pipeline.

PROJECTS

IPL Visualization Dashboard using Big Data Analytics (CS661, Guide: Prof. Soumya Dutta) 📄 (Jan'24 - April'24)

- Performed **EDA** on IPL 2008-2023 data to extract relevant insights on player performance, match dynamics, and trends.
- Leveraged historical data to uncover valuable performance metrics and trends, and built a 4-module dashboard.
- Built an interactive IPL Data Visualization dashboard with team analysis, player comparisons and fantasy team selection.
- Constructed an algorithm to select the **top 11 fantasy team** players based on recent performance metrics.
- Tech Stack:** Python, Dash, Plotly

News Article Headline Generation for Indian Languages (CS689, Guide: Prof. Arnab Bhattacharya) 📄 (Jan'24 - Apr'24)

- Designed **NLP** methods to generate headlines for news articles in **Gujarati** and **Telugu** language, including **dataset preparation**, model **fine-tuning**, and **evaluation**.
- Applied **Zero Shot** model to distinguish between sarcastic and non-sarcastic articles, fine-tuned **Google's mT5-small** model to generate headlines in both languages.
- Translated headlines to English using **Indic-Trans** model, fine-tuned with **Pegasus** Model, then translated back to original languages and assessed accuracy with various metrics such as **ROUGE** and **BLEU** Score.

Campus Connect: Marketplace & Ride-Sharing (Self Project) 📄 (Jul'24 - Aug'24)

- Developed a Buy and Sell module with **JWT user authentication**, enabling product listing, item search/filtering and WhatsApp communication between buyers and sellers.
- Implemented a Shared Taxi booking system for **IIT Kanpur** students, allowing cab/auto bookings, ride updates and real-time availability for shared rides.
- Tech Stack:** ReactJS, Fast Api, MongoDB

Program Analysis, Verification and Testing on Turtle Framework (CS639, Guide: Prof. Subhajit Roy) 📄 (Aug'23 - Nov'23)

- Developed and integrated a custom mutation operator and coverage metric for a **Fuzzer**, to maximize program's coverage.
- Ensured semantic equivalence by synthesizing unknown constants with **Symbolic Execution** in two programs.
- Implemented **Spectrum-Based Fault Localization (SBFL)** to identify buggy component within the program.

TECHNICAL SKILLS

Languages: C, C++, Python, JavaScript **ML Libraries:** Scikit-Learn, PyTorch, Pandas, NumPy, Matplotlib
Technologies: LangChain, LangGraph, React.js, Express.js, Node.js, jQuery, Bootstrap, TailWind CSS, HTML, CSS
Database: MongoDB, Oracle, MySQL **Software/ Tools:** \LaTeX , VS Code, Git, GitHub, Google Colab

ACADEMIC ACHIEVEMENTS AND POSITIONS OF RESPONSIBILITY

Secured **All India Rank 384** in GATE CS 2023, in which 75680 candidates appeared for the examination
Achieved **99 Marks out of 100** in **Mathematics** in **12th Board Science**.
Teaching Assistant: Theory of Computation (CS340) (Aug'24 - Present)
Teaching Assistant: Fundamentals of Computing (ESC111/112) (Jul'23 - Apr'24)

RELEVANT COURSES

Computational Linguistics for Indian Languages | Introduction to ML | Program Analysis Verification & Testing | Big Data Visual Analytics | Mathematics for Computer Science | Data Structures & Algorithms | Operating Systems | Computer Networks | Database Management System | Computer organization & architecture