SHREYA SINGHAL

Roll No.:2511AI21
MTECH
Artifical Intelligence
Indian Institute Of Technology, Patna

+91-9084959339
shreya_2511ai21@iitp.ac.in
shreyasinghal61@gmail.com
shreyasinghal-17
linkedin.com/in/shreya-singhal-7651401a4

Education

Degree	Institute/Board	CGPA/Percentage	Year
M.Tech. (AI)	Indian Institute of Technology, Patna		2025 - 2027
B.Tech. (CSE)	Jain University Bangalore	8.82 CGPA	2019-2023
Senior Secondary	CBSE Board	87.2%	2019
Secondary	CBSE Board	9.8 CGPA	2017

Experience

- **IIT PATNA** *JUNE 2024 - JULY 2025*
  Junior Research Fellow(JRF) PATNA
  – Optimized EV routing efficiency by formulating and solving an NP-hard combinatorial problem, resulting in routes that reduce operational costs by 15%.
  – Implemented and fine-tuned a Genetic Algorithm, achieving near-optimal solutions (within 2% of the theoretical optimum) for large-scale instances with 50+ vehicles and 1000+ delivery points.
  – Formulated a constraint satisfaction model to optimize vehicle scheduling, handling multiple constraints including battery capacity, range limitations, and time windows.

- **ClusterDev Technologies** *JULY 2023 - MAY 2024*
  AI Engineer Intern Remote
  – Trained and optimized Kaldi models for Automatic Speech Recognition in different 5+ Indian languages such as Malayalam, Bengali, and Tamil.
  – Handled routine data management tasks, including organizing and preprocessing large datasets of more than 1TB for model training, and calculating various metrics to evaluate model accuracy and performance.
  – Utilized Natural Language Processing (NLP) techniques to address challenges presented by morphologically rich Indian languages and to solve language-specific problems effectively.

Projects

- **Revenue Optimization Framework for EVs' Routing and Scheduling** *June 2025*
  Designed EV routing algorithms with near-optimal results and built a full-stack web platform.
  – **Tools & technologies used**: MERN Stack, Genetic Algorithm, Simulated Annealing Algorithm, Beam Search
  – End-to-End Web Platform Development: Developed a complete web-based platform for EV transportation management, encompassing frontend and backend systems. Built user-friendly interfaces and robust functionality for admins, drivers, and end-users. Ensured reliability through comprehensive testing and deployment of all system modules.

- **Subword Tokenization Implementation for Enhanced NLP** *April 2024*
  Implemented subword tokenization to enhance NLP model precision and semantic understanding.
  – **Tools & technologies used**: Python, kaldi Toolkit, Sentence piece library
  – Implemented subword tokenization technique, a method that breaks down words into smaller, more contextually relevant units, enhancing our project's language processing by capturing nuanced semantics and improving model comprehension.

Key Courses Taken

- Data Structure, Algorithms, DBMS, Machine Learning, Artificial Intelligence, Operating System

Technical Skills

- **Programming:** C/C++, Python, JavaScript, SQL
- **Tools & OS:** Git, Jupyter Notebook, Google Colab, Linux, Windows, MongoDB
- **Libraries/Frameworks:** Pandas, Numpy
- **Web Skills:** HTML, CSS, ReactJS, ExpressJS, NodeJS