

SAMARTH NAGPAL

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EDUCATION

Bachelor of Technology in Production and Industrial Engineering
Delhi Technological University

2022 – 2026

TECHNICAL SKILLS

Languages	Python, SQL, JavaScript, TypeScript, HTML, CSS
Tools	Git, Power BI, Excel, OpenAI API, PuLP, Jupyter Notebook, Docker, WebRTC, PostgreSQL, MongoDB
Web Technologies	ReactJS, Flask, Bootstrap, SQLite, Post Man, NodeJS, Express JS, NextJS, Tailwind, AWS S3, AWS Lambda
Libraries	Scikit-learn, Pandas, Beautiful Soup, Matplotlib, Seaborn, TensorFlow, OpenCV, NLTK
Others	Data Preprocessing (normalization, imputation, outlier detection), Predictive Modelling, Regression, Clustering, Classification, Machine Learning, Natural Language Processing, Computer Vision, Dashboard and Visualization Creation, Data Analysis and Cleaning

WORK EXPERIENCE

Machine Learning Intern | Suvidha Foundation, Delhi | [Link](#) **08/2024 – 09/2024**

- Designed a **hybrid LLM-LP model** for optimized resource allocation, decreasing waste by 20% and enhancing coverage in high-need rural areas.
- Led multi-source **data preprocessing, implementing normalization, imputation, and outlier detection** to improve dataset reliability by 40%.
- Built interactive dashboards with Matplotlib, Seaborn, and Power BI, providing **real-time metrics tracking and enhancing decision-making** for a 30% wider program reach across India.
- Delivered **monthly impact reports**, pinpointing improvements in attendance and nutritional outcomes, and guiding strategic resource distribution increasing efficiency by 25%.

Tools used: Python, Matplotlib, Seaborn, Power BI, OpenAI API, PuLP, Pandas, Excel, SQL, Git

Web Development Intern | IATSAT, Delhi | [Link](#) **08/2023 – 11/2023**

- Revamped user interface with ReactJS, resulting in a **25% increase in click-through rate (CTR)** and improved user experience.
- Led a team of 10 junior developers**, fostering collaboration and providing mentorship.

Tools used: HTML, CSS, JS, ReactJS

PROJECTS

Realtime Voice Communication Platform | [Link](#) | React, Next.js, Node.js, WebRTC, Docker, MongoDB, PostgreSQL

- Engineered a peer-to-peer **voice communication system using WebRTC and Socket.io**, achieving sub-200ms latency for real-time audio transmission.
- Integrated **MongoDB and PostgreSQL to store call metadata and analytics**, supporting concurrent users with 99% data consistency.
- Designed a **responsive UI with React, Next.js, Redux, Material-UI, and Tailwind CSS**; containerized the app with Docker and **automated deployment** via GitHub Actions and AWS S3/Lambda.

MERN Stack Product Store | [Link](#) | MongoDB, Express.js, React, Node.js

- Built a full-stack product **CRUD app with real-time UI updates** and persistent storage, featuring a React frontend with Chakra UI, dynamic routing, and form validation.
- Developed **RESTful APIs using Express.js and MongoDB** for seamless data operations and implemented modular code with environment-based configuration for easy deployment.
- Built a responsive **React frontend with Chakra UI**, featuring dynamic routing, form validation, and light/dark modes.

Sentiment Analysis Application | [Link](#) | Fast API, NLTK, React

- Crafted an AI solution that processed up to **100 entries per CSV file while managing 50 concurrent requests**, optimizing system efficiency by streamlining operational workflows with minimal latency involved.
- Optimized API performance to **reduce response time by 20%**, processing CSV files with up to **100 entries** and handling **50 concurrent requests** efficiently.
- Delivered a user-friendly interface with dynamic visualizations (Pie and Bar charts) using Recharts, **improving data interpretation speed by 30%**.

POSITIONS OF RESPONSIBILITY

- Secretary, IEEE DTU.
- Organizing Committee, DelTech MUN and Debating Society.
- Consultant, DTU Consulting Group.