

# Vaibhav Singh

Associate Data Scientist/Developer

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## SUMMARY

Results-driven Data Science Intern with hands-on experience in building AI-driven chatbots, scalable APIs, and end-to-end machine learning pipelines. Skilled in Python, PyTorch, FastAPI, and modern NLP/speech technologies such as BERT, NVIDIA NeMo, and Pyannote. Proficient in developing real-time applications with a strong foundation in data manipulation, machine learning, and web development. Adept at integrating LLMs and prompt engineering to solve real-world problems. Demonstrated excellence through impactful internships, and hackathons with a proven ability to communicate technical solutions clearly and effectively.

## WORK EXPERIENCE

### Data Science Intern, OriServe, Noida, India

Jul 2024 - Present

( Python, PyTorch, FastAPI, LLMs, Prompting, etc )

- Collaborated on AI-driven chatbot development and automation solutions, leveraging models like BERT, Pyannote, NVIDIA NeMo, etc and frameworks like Pytorch, Plotly, etc to enhance user engagement and operational efficiency.
  - Designed and deployed scalable FastAPI services to integrate AI and streaming functionalities, ensuring optimized system performance and seamless user experiences
  - Designed robust pipelines for TTS and STT datasets, enabling efficient preprocessing, training, and evaluation with advanced speech techniques.
  - Applied prompt engineering to refine outputs across diverse use-cases, gaining hands-on experience on LLMs response optimization.
  - Authored an article on Medium: ***Building High-Fidelity Datasets for Superior Text-to-Speech Fine-Tuning***, offering insights on best practices, challenges, and strategies for ensuring superior audio output quality.
- WEB DEVELOPMENT INTERN AT THE SPARKS FOUNDATION ( MongoDB, JavaScript, Handlebars, HTML, CSS )

### Web development Intern, The Sparks Foundation

- Developed a dynamic banking website with real-time transactions and user-friendly UI to simulate financial operations.

### Participant, HACKATHONS & CLOUD ( BITBOX, Google Cloud Study Jams )

- Participated in BITBOX by GDSC IIIT 128, a 12-hour hackathon fostering team collaboration and stress management in a pro environment.
- Earned **badges** in Generative AI Arcade Game, Google Cloud Computing Foundations, and more via Google Cloud Study Jams.

## EDUCATION

JAYPEE INSTITUTE OF INFORMATION TECHNOLOGY, Noida, India - B.Tech, Computer Science & Engineering - GPA: 7.3

Sep 2021 - Jun 2025

## PROJECTS

### CRYPTONIX

- Built a cryptic toolkit with cipher solvers, encryption-decryption, steganography, and password strength checker.
- Applied DSA concepts like maps, vectors, recursion, hashing, and collision handling.

### PYTONE – REAL-TIME SPEECH EMOTION RECOGNITION

- Developed emotion recognition system using real-time speech and text analysis via ML models to enhance interaction quality.

### BCI Games–Brain – ControlledInterfaceGame

- Engineered brain-computer interface using EEG signals, enabling real-time in-game actions triggered by smile detection; participants achieved 95% accuracy in executing commands, reducing cognitive load during gameplay and were impressed with novel interface.

### AID FOR SPEECH AND HEARING IMPAIRED

- Developed real-time ISL translator using speech-to-text and SIGML-based animations for inclusive communication support.

## SKILLS

**Programming Languages** : Python, C++, SQL, C, Html, CSS, Javascript  
**Data Manipulation** : Pandas  
**Web Development** : FastAPI, Flask, Django, Websockets  
**Machine Learning** : torch, lightning, tensorflow  
**Other Tools** : Shell, PowerBI