Vrinda Bajaj

EDUCATION

Vellore Institute of Technology, Vellore   Sept. 2022 – Present
Bachelor of Technology in Computer Science (III-Year)   *CGPA: 8.9*

The Kalyani School, Pune | Class XII   *Percentage – 93%*

Modern Vidya Niketan, Faridabad | Class X   *Percentage – 97.8%*

EXPERIENCE

Nokia 5G Research   Oct 2024 – April 2024
Project Intern
- Leading a team to develop advanced machine learning models focusing on innovative approaches and optimizing techniques (Project guide - Mr Rakshesh P, Sr Manager - Analytics, Nokia)
- Simulating and optimizing the NEA-based encryption process for secure 5G authentication protocols.
- Designing and implementing prototypes for 5G Authentication and Key Agreement (AKA) processed, showcasing expertise in 5G security protocols.

Bajaj Finserv Ltd.   June 2024 – July 2024
Data Science Intern   *Pune*
- Engineered a content-based recommendation engine for *Song-Hub*, analyzing over 5,000+ songs to deliver tailored suggestions across genres and moods.
- Integrated speech recognition to enhance user friendliness in the system, making it interactive and easy to use.

VITMUNSoc   January 2024 – Dec 2024
Co-Secretary & Director University Laision   *Pune*
- Led and organized one of the largest MUNs, with 400+ participants, focusing on effective planning, collaboration, and seamless execution.
- Managed a club of 2000+ members, oversaw successful execution of 20+ high impact events enabled by strong teamwork and strategic planning.

PROJECTS

Deepfake Detection / *XAI, XceptionNet,Streamlit, PyTorch*
- Developed a real-time system for detecting deepfake images and manipulated texts, achieving 93% accuracy in image detection.
- Fine-tuned deep learning model like XceptionNet using PyTorch for prediction and integrated Grad-CAM for model transparency.
- Built an interactive interface using Streamlit for real-time AI-generated content analysis and seamless user interaction.
- Employed Sentence Transformer and Logistic Regression for Text detection, employing Google's API for fact checking and SHAP to maintain transparency in the prediction achieving accuracy of 85%.

Song-Hub / *Python, OpenCV, MediaPipe*
- Built an intelligent music platform enabling hands-free interaction through gesture recognition, mood-based song suggestions via facial analysis, and voice-enabled search.
- Developed a personalized recommendation engine leveraging CNN &LSTM to deliver context-aware and multi-category song suggestions.
- Integrated real-time audio-visual inputs using OpenCV and SpeechRecognition, enhancing accessibility, responsiveness, and user engagement.

Research Paper Ranker & Summarizer / *Python, Gradio, Transformers, T5-Small*
- Designed and implemented an end-to-end NLP research assistant tool that fetches, summarizes, and ranks arXiv papers by topic.
- Developed a modular offline summarization pipeline using t5-small, incorporating sentence-level chunking for long texts, structured summary generation, keyword extraction using nltk frequency distribution.
- Optimized for lightweight local deployment without relying on large cloud APIs or external services.

TECHNICAL SKILLS

- **Languages**: Python, C/C++, SQL, Javascript, HTML, CSS, R
- **Frameworks**: TensorFlow, Scikit-learn, PyTorch, Hugging Face Transformers, Streamlit, Gradio
- **Developer Tools**: GitHub, Google Cloud API, Grad-Cam, Jupyter Notebook, Elastic Search
- **Communication**: Public Speaking, Debate, Pitching

ACHIEVEMENTS AND CERTIFICATIONS

Finalists at The Yantra Central Hackathon'25   February 2025
- Secured a Top 20 spot out of 150+ teams for developing a real-time AI deepfake detection system.

University Finalists at Smart India Hackathon'24   August 2024 – October 2024
- Ranked among the top 80 teams out of 400, representing VIT in the final university round with an innovative Blockchain and Cryptography idea focused on enhancing security

Standard Machine Learning Specialization: Stanford Online | Coursera   December 2023

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