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 – Present
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*

- Built a personalized recommendation system for Song-Hub, tailoring to similarities in song features to suggest songs to the users across various categories.
- 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* February 2025 -Present

- 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%.

Hand Gesture-Based Music Control & Interaction | *Python, OpenCV, MediaPipe* February 2025 – Present

- Developed a real-time gesture recognition system for hands-free music playback and volume control.
- Integrated Pycaw to dynamically adjust system volume based on hand proximity, improving user experience.
- Enhanced accuracy and responsiveness by optimizing frame processing and implementing a gesture cooldown mechanism.

Song-Hub | *Python, ElasticSearch, Flask* June 2024 – Jul 2024

- Spearheaded the development of an advanced recommendation model for Song-Hub, enhancing user satisfaction by delivering personalized song suggestions.
- Enhanced search capabilities, delivering precise results across multiple categories and user preferences.
- Integrated voice search functionality using Speech Recognition libraries, enabling hands-free song discovery improving accessibility and user experience.

Red Tape | *HTML, CSS, Javascript* January 2024 – April 2024

- Innovated a responsive and intuitive user interface, ensuring seamless interaction across devices.
- Designed robust features, including a product filtering system, optimizing the user journey.
- Interfaced optimized navigation and search functionalities, simplifying product discovery for users.

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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