# Vrinda Bajaj

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## 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*

- Developing advanced machine learning models focusing on innovative approaches and optimisation 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.

**Data Science Intern** June 2024 – July 2024
*Bajaj Finserv Ltd.* *Pune*

- Built a personalized recommendation system for Song-Hub, utilizing advanced algorithms to suggest songs tailored to user preferences across various categories.
- Integrated speech recognition to enable voice-based song search and recommendations.

**Co-Secretary and Director University Laision** January 2024 – Dec 2024
*VITMUNSOC*

- 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 team work and strategic planning.

## PROJECTS

**Deepfake Detection** | *XAI, XceptionNet,Streamlit, PyTorch* February 2025 -Present

- Developed a real-time system for detecting deepfake images and manipulated text, 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%.

**Cryptography and Machine Learning** | *Python, Matplotlib, Scikit-Learn* October 2024 – Present

- Optimized encryption efficiency by optimizing AES-128 and NEA-128 keystream generation processes.
- Implemented machine learning models to analyze and predict encryption accuracy, improving cryptographic security.
- Designed prototypes demonstrating advancements in secure data communication using cutting-edge algorithms.

**Song-Hub** | *Python, MongoDB, 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.

## 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