Pratham Raj Sinha

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Career Objective

To learn and apply advanced technology to build applications and solutions that would solve real-world problems.

Education

Vellore Institute of Technology, India Sept 2021 - Present
Bachelor of Technology in Information Technology **CGPA: 8.57/10**

Experience

Data Science and Machine Learning Intern, Piatrika Biosystems Aug 2023 - Nov 2023

- Architected a scalable framework for parallel testing of over 5 machine learning models using Python, accelerating model validation speed and slashing overall testing time by 50%
- Demonstrated adaptability in applying data preprocessing, machine learning techniques like hyper-parameter tuning, and implemented new algorithms like SAHI and Kornrows

Vice President of Education and Secretary, Toastmasters International Jan 2023 - Dec 2023

- Elevated public speaking, analytical, and comprehension abilities through rigorous engagement and practice
- Supported members, increasing club membership by 15% through improved program quality

Projects

StudyZ: AI-Generated Study Pathways Website | *GCP, AI/ML, Web Development*

- Developed (StudyZ), a website that creates personalized AI-generated study pathways for users
- Implemented AI apis to generate comprehensive notes, relevant questions, and additional learning resources based on custom study paths
- Utilized generative AI techniques to ensure appropriate content generation

Email Spam Detection using Machine Learning Models | *Python, Jupyter Notebook*

- Architected and compared various machine learning models for email spam detection, including Random Forest, Gradient Boost, Neural Networks, Logistic Regression, Support Vector Machine, and Linear Discriminant Analysis
- Random Forest achieved an accuracy of 90.07%, identifying spam emails by analyzing common words and enhancing email security against phishing and scams

Diabetes Prediction on PIMA Dataset | *Python, Jupyter Notebook*

- Leveraged Gradient Boost, Neural Networks, Logistic Regression, Support Vector Machine, Linear Discriminant Analysis, and Decision Trees to predict diabetes with the PIMA dataset. Obtained an accuracy of 92%

Research on Homomorphic Encryption Schemes

- Dissected Homomorphic Encryption (HE) schemes and their applications. Highlighted how HE enables computations on encrypted data without decryption, enhancing data privacy and security

Information Security Implementations | *Java, Python*

- Developed multiple information security systems: intelligent cryptography, blind sign authentication using RSA, digital envelope, and vulnerability testing using 64 bit keys

Technical Knowledge and Exposure

Languages: Python, Java, C, C++, SQL, NoSQL, HTML, CSS, JavaScript
Technologies: ML, InfoSec, CyberSecurity, Big Data, Data Analytics, Embedded Systems, Software Engineering
Certifications: Python for Data Structures, Algorithms; Automated Machine Learning BootCamp - *Udemy*

Additional

Languages: English, Hindi, Bengali, Kannada: *Proficient* | Japanese, Spanish: *Basic (Learning)*
Interests: Music (Piano, Tabla, Beatbox), Sports (Badminton, Table tennis), Travel (Exploring similitude in cultures)