Aditya Kumar Sinha

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EDUCATION

Indraprastha Institute of Information Technology Okhla, New Delhi
Bachelor of Technology in Computer Science Engineering | CGPA: 7.0 *Nov. 2022 – Present*

Kendriya Vidyalaya Vigyan Vihar , New Delhi
Higher Secondary | 90.8% *Apr. 2019 – March 2020*

EXPERIENCE

Undergraduate AI/ML Researcher @USG Lab August 2024 – Present
Indraprastha Institute of Information Technology *Okhla, New Delhi*

- Developing a multimodal neural network for sarcasm detection using TensorFlow, Wav2Vec2, and Word2Vec, processing 6,000+ video, text, and audio samples for improved classification.
- Implementing fake call detection with scikit-learn, librosa, and pre-trained models like Pengi, analyzing large-scale audio datasets for robust classification.
- Collaborating with a PhD mentor, optimizing deep learning architectures with PyTorch, SelectKBest, PCA, and AdamW optimizer, targeting a 15% accuracy boost and potential publication by mid-2025.

Teaching Assistant August 2024 – December 2024
Indraprastha Institute of Information Technology *Okhla, New Delhi*

- Assisted in teaching "Introduction to Programming in Python" to first-year students, enhancing their understanding of core programming concepts.
- Facilitated lab exercises on HackerRank, supporting students in developing practical programming skills, improving overall student performance by 50%
- Earned 2 academic credits for delivering effective and impactful teaching assistance.

PROJECTS

Data Analyst Agent | *Python, LLMs, Streamlit* March 2025

- Built a Data Analyst Agent to process .docx, .txt, .xlsx, .csv, .pdf, images, answer queries, and generate visualizations.
- Integrated Google Gemini API for multimodal LLM-based insights.
- Developed a Streamlit-based backend for seamless document analysis and interactive data processing.

Stick Hero Game | *Java, JavaFX, JUnit, SceneBuilder (FXML), Git* Nov. 2023– Dec. 2023

- Developed Stick Hero game with 1,500+ lines of Java and FXML, implementing OOP principles like inheritance and polymorphism to create a modular, maintainable codebase.
- Designed an engaging UI with JavaFX, delivering smooth animations and interactive gameplay that improved player retention by an estimated 20%.
- Demonstrated expertise in Java, OOP, and FXML-based UI design, achieving optimized gameplay performance.

Assembler and Simulator | *Python, RISC ISA, Pycharm,Github, Algorithms* June 2023 - July 2023

- Developed an assembler and simulator in Python for a specified RISC ISA, incorporating error handling mechanisms.
- Created the simulator to emulate a virtual RISC processor, managing runtime errors and providing accurate simulation.
- Demonstrated proficiency in Python programming, assembly language concepts and computer organisation and architecture concepts.

TECHNICAL SKILLS

Key Skills: Java, Python, C/C++, JavaScript/Typescript, Machine Learning, Deep Learning
Frameworks: React, Node.js, Flask, JUnit, Express.js
Developer Tools: Git, GitHub, VS Code, PyCharm, IntelliJ, Eclipse, Jupyter Notebook, Linux, Postman API, SceneBuilder (FXML)
Libraries: Numpy, C++ STL, OpenCv (Basic), JavaFX, FaceRecogniton, PyMySQL, Pandas, Tensorflow, scikit-learn, MatplotLib
DataBases: MySQL, MongoDB
Web Technologies: HTML5, CSS3, AJAX, Tailwind Css, JavaScript, Express.js, Node.js