Tejaswini Samanta

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EDUCATION

Miranda House College, University of Delhi   North Campus, Delhi, India
BSc Mathematics (Honours)   *Aug.2024 – (Expected Graduation) Aug. 2027*
- Relevant Coursework: Calculus, Linear Algebra, Real Analysis, Statistics and Probability, Data Analysis
- Organisations: Entrepreneurship Cell, Sankhya - Mathematics Society

EXPERIENCE

Undergraduate Research Assistant   Oct. 2024 – Present
Miranda House, University of Delhi   *New Delhi, IND*
- Explored ways to visualize GitHub collaboration in a classroom setting

Student Researcher; Science Internship Program (SIP)   June 2023 – Aug. 2023
University of California, Santa Cruz   *Remote*
- Researched existing public data archives for galaxy properties (masses and distances) of the nearby group members
- Reduced the Gemini/GMOS spectra of galaxies targeted in the field (time permitting)
- Estimated the spectroscopic redshifts and thus infer distances to the GMOS galaxies
- Inferred the fraction of the FRB dispersion arising from the galaxies studied above
- Invited to present at the Life and Space Conference 2023 by Polish Astrobiology Society
- Invited to the Harvard Science Research Conference 2023 by The Harvard Undergraduate Research Association

Girls Who Code : Summer Immersion Program   August 2024
Girls Who Code   *Remote*
- Engaged in a transformative program led by industry like *Morgan Stanley, MetLife, Bank of America, and Accenture.* Developed hands-on skills and collaborated with peers and industry professionals; programmed 2 games
- Explored a game design curriculum and organized the school's first Scratch programming competition.

TECHNICAL SKILLS

Languages: Python, C, MySQL, LaTeX, HTML/CSS, R
Frameworks: React,, Node.js, WordPress
Developer Tools: Git, Docker, VS Code, Visual Studio, Figma
Libraries: Pandas, NumPy, Seaborn, PyTorch, scikit-learn, Matplotlib, Astropy, Scipy

PROJECTS

GAIA App | *Python, PyTorch + library : PSutil + matplotlib, Figma*   September 2024
- GAIA, a server manager, a middleman app between server providers and our clients - small and medium businesses - which would allow for a better sharing of server resources and also help limit the energy usage of the servers.
- It schedules them to turn on and off using an AI and divide server usage between different clients while assuring privacy, cost minimisation, and energy efficiency.

PCOS Chatbot | *Python, K-Nearest Neighbors (KNN), LangChain, LLaMA, Generative AI*   September 2024
- A medical chatbot specializing in PCOS and women's health using RAG with BioMistral-7B model, KNN, Langchain for pipeline, Sentence-Transformers for embedding, and Chroma as the vector store.

phishingDetector | *Python, PyTorch + library : PSutil + matplotlib, Figma*   September 2024
- Developed an ML model to detect phishing links by analyzing URL attributes like IP type, length, shortening service usage, and domain age, and classifies them as legitimate or phishing (trained on 300+ URLs).

HONOURS

1st position in CompuAda Case Competition by Department of Computer Science, University of Delhi.
UniHack 2024 by ProjectSet: 1st place Global Winner among 107 participants and 48 teams in CSR track.
1st place in Case Study Competition - Ada Lovelace Day '24: Department of Computer Science, Miranda House
AI4GOOD INCUBATOR by Teens in AI and Sage: Global 2nd Place Winner; won USD 300 cash prize
Student Space Congress '23 by NewSpace Chicago: Global High School Winner; won USD 500 cash prize
IRIS National Fair Finalist 2024: Physics and Astronomy category award by the Govt. of India
Best Functional Website Award: The Stanford Daily - Tech Journalism Program (USD 2180 Scholarship)