

Tejaswini Samanta

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EDUCATION

Miranda House College, University of Delhi <i>Bachelor of Science in Mathematics with Honours</i>	North Campus, Delhi, India Aug. 2024 – May 2027
<ul style="list-style-type: none">• Courses: Calculus, Algebra, Elementary Real Analysis, Probability and Statistics• Organisations: Entrepreneurship Cell, Mathematics Society, TEDx MH, National Service Scheme	
Army Public School Delhi Cantt <i>Science and Mathematics : Led Phy/Chem/CS labs. Expertise in setup/ procedures/ analysis.</i>	New Delhi, India April 2023 – June 2024

EXPERIENCE

Undergraduate Research Assistant <i>Miranda House, University of Delhi</i>	Oct. 2024 – Present New Delhi, IND
<ul style="list-style-type: none">• Explored ways to visualize GitHub collaboration in a classroom setting	
Student Researcher; Science Internship Program (SIP) <i>University of California, Santa Cruz</i>	June 2023 – Aug. 2023 Remote
<ul style="list-style-type: none">• 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 <i>Girls Who Code</i>	August 2024 Remote
<ul style="list-style-type: none">• Engaged in a transformative program led by industry like <i>Morgan Stanley, MetLife, Bank of America, and Accenture</i>. 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: Java, Python, C, SQL (Postgres), JavaScript, HTML/CSS, R
Frameworks: React, Node.js, Flask, JUnit, WordPress, Material-UI, FastAPI
Developer Tools: Git, Docker, TravisCI, VS Code, Visual Studio, Figma, PyCharm, IntelliJ, Eclipse
Libraries: pandas, NumPy, Matplotlib, Astropy, Scipy

PROJECTS

GAIA App <i>Python, PyTorch + library : PSutil + matplotlib, Figma</i>	September 2024
<ul style="list-style-type: none">• 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 <i>Python, K-Nearest Neighbors (KNN), LangChain, LLaMA, Generative AI</i>	September 2024
<ul style="list-style-type: none">• 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 <i>Python, PyTorch + library : PSutil + matplotlib, Figma</i>	September 2024
<ul style="list-style-type: none">• 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

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
WOMANIUM AstroBiology: Special Mention, Global Finalist; Top 6/300+ teams amid UG/PG/PhD academics.
Best Functional Website Award: The Stanford Daily - Tech Journalism Program (USD 2180 Scholarship)