SIDDHARTHA MAHAJAN

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EDUCATION

Bachelor of Technology (B.Tech.), Cluster Innovation Centre, University of Delhi 2021–2025
Study Areas: IT & Mathematical Innovations, Computational Biology **8.8/10**
Relevant Courses: Calculus, DSA/DAA, ODEs/PDEs, Probability, AI-ML, DBMS (SQL), Statistics, Graph Theory, Linear Algebra, In-Silico Biology, Systems Biology, Complex Analysis, Group Theory, Numerical Methods.
Visit Website

SKILLS

Programming Languages	Python, C#, Java, Julia, Go, C, R
Data Analysis and ML	scikit-learn, NumPy, Pandas, Keras, PyTorch, Jupyter, Excel, Data Visualization, LLMs, ML.NET, Neural Networks
Software and Tools	MATLAB, Mathematica, LaTeX, Modeller, MEGA, Discovery Studio, Microsoft Office, ArcGIS, Git/Github, Pinecone, Selenium, BeautifulSoup
Libraries and Frameworks	AWT, Swing, PyGame, SciPy, Transformers

RESEARCH EXPERIENCE

Research Assistant, SBILab, IIIT-Delhi March 2025 - August 2025
ECG-based Subclass Classification for Cardiovascular Diseases Transformers Signal Processing Deep Learning
Worked with Prof. Anubha Gupta on ECG-based subclass classification for CVD. Also worked on a review of risk calculators for Multiple Myeloma staging.

Research Intern, IISc Physics Dept. June 2024 – July 2024
Predicting Binding Affinities in Antibody-Antigen Binding ChimeraX Modeller GROMACS
Under the guidance of Prof. Prabal Maiti at the Department of Physics, IISc, conducted research on predicting binding affinities in antibody-antigen binding. Employed ChimeraX, Modeller, and GROMACS to analyze protein structures and simulate molecular interactions.

Predicting Efficacy of Antiseizure Medication Treatment with Machine Learning Algorithms in North Indian Population 2023–2024
Mahima Kaushik, Bibhu Biswal, Siddhartha Mahajan et al scikit-learn Pandas Data Analysis
Epilepsy Research, Volume 205, September 2024. ISSN:0920-1211 10.1016/J.EPLEPSYRES.2024.107404
Conducted predictive modeling for anti-epileptic drug outcomes using patient data. Utilized six Machine Learning (ML) algorithms for prediction and classification. Achieved over 70% accuracy in predicting drug responses.

Student Researcher, CIC, DU 2023–2024
Disease–Disease SNP Network Analysis and Community Detection NetworkX Matplotlib PyVis
Analyzed disease networks using SNP data. Built graphs with NetworkX, applied Louvain and SLPA for community detection, and visualized results using Matplotlib and PyVis.

WORK EXPERIENCE

Research Associate, SBILab, IIIT-Delhi August 2025 – Ongoing
Methods for Parameter Efficient Finetuning and CVD Subclass classification ViT LoRA PEFT
Working with Prof. Anubha Gupta on ECG-based subclass classification for CVD using a custom ViT trained on over 10 million ECGs. Also exploring parameter-efficient fine-tuning methods, extensions of LoRA and custom adapters.

Machine Learning Intern – Beyond Exams May 2022 – November 2022
Developed a machine learning model to classify YouTube videos into educational or not and further into subcategories using a self-scraped dataset. Involved in data scraping using the YouTube V3 API, BeautifulSoup, and Selenium; data cleaning in Python and Excel; and model building in ML.NET (C#). Machine Learning

PROJECTS

Semantic Search Engine cosine-similarity Streamlit SentenceTransformers huggingface
Developed a semantic search engine using SentenceTransformers and Streamlit. Integrated SerpApi's Google Search API for top results. GitHub Repo

Chronicles of Alexandria Flask Pinecone Web Scraping Semantic Search
Created a comprehensive library for documentaries with semantic search using Pinecone and SentenceTransformers. Devpost

AI Adversarial Agent Image Processing PyTorch TensorFlow Adversarial AIs
Developed a browser extension that cloaks images via adversarial perturbations to protect identities from recognition software.

Data Analyzer with AI Pandas Data Visualization matplotlib
Built a data-analyzer that uses AI to select and generate optimal visualizations from raw datasets, implemented in Flask and Streamlit. GitHub Repo

VOLUNTEERING EXPERIENCE

Mentor/Speaker – DYOD Induction Program, Jammu University 20–23 September 2023
Served as a mentor and speaker at the induction program for first batch of the Design Your Own Degree (DYOD) program at Jammu University. Mentored students on various aspects including making presentations, project development, innovative thinking, and conducted ice-breaking sessions.