Archismwan Chatterjee

Email: archismwancmail@gmail.com
Linkedin: linkedin.com/in/archismwan-chatterjee
Portfolio: archismwanchatterjee.github.io/ProfileCard
Mobile: +91 9830439780
Github: github.com/ArchismwanChatterjee

EDUCATION

- **Netaji Subhash Engineering College** — Kolkata, India
  Bachelor of Technology - Computer Science Engineering; CGPA: 8.6 — *July 2022 - June 2026*

SKILLS SUMMARY

- **Languages**: C, C++, Java, Python, R, SQL
- **Frontend**: CSS (Tailwind, Bootstrap), Vanilla.js, Vite.js, React.js, Next.js, Astro.js
- **Backend**: Node.js, Express.js, Django, FastAPI, Google Cloud Platform (GCP), AWS, Firebase, Docker
- **Machine Learning**: Supervised Learning, Unsupervised Learning, Clustering Algorithms, Classification Models, Deep Learning, NLP, Pattern Recognition, Computer Vision, Image Processing, Remote Sensing, Geospatial Analysis
- **Database**: PostgreSQL, MySQL, SQLite, GraphQL, MongoDB
- **Soft Skills**: Leadership, Strong Analytical, Troubleshooting abilities, Quick to Adapt and Learn New Technologies

EXPERIENCE

- **Indian Statistical Institute - Kolkata** — Kolkata
  Research Intern — *July 2024 - Present*
  - Analyzed satellite imagery using QGIS for land cover classification and change detection.
  - Conducted geospatial analyses and created detailed maps using QGIS and Python.
  - Automated data processing and analysis tasks using Python, Evalscript, GDAL, Rasterio, and SNAP.
  - Worked with multispectral, hyperspectral, and radar data from various platforms, including Sentinel-2.

- **Aecho.ai** — Remote
  SDE Intern — *April 2024 - Present*
  - Created and managed high-performance, responsive web interfaces using Astro, achieving a 40% reduction in page load times and a 30% increase in user engagement metrics.
  - Designed and deployed robust APIs to enhance frontend and backend communication, improving application functionality and efficiency by reducing API response times by 25% and increasing data throughput by 35%.
  - Developed and deployed models for Intoxication Detection, Financial Loan Predictions, and Disease Detection, achieving a 90% accuracy rate in predictions and improving overall model performance by 50% through advanced algorithms.
  - Created several scripts to streamline and automate various processes, resulting in a 200% increase in production efficiency and a significant reduction in manual effort.
  - Technologies used : Python, Scikit-learn, TensorFlow, FastAPI, Git, Astro, JavaScript, Tailwind CSS, Node.js, Express.js, AWS.

PROJECTS

- **SightSync Harmony**: Developed an AI-powered image analysis web app that provides both text and audio output, with additional features like output translation, custom image analysis based on user input, and image generation. Integrated a zero-shot learning object detection model using the Gemini API, capable of identifying objects beyond its training set, and leveraged Retrieval-Augmented Generation (RAG) to enhance detection accuracy by incorporating external knowledge. Utilized few-shot encoding to customize the response structure, ensuring adaptability to diverse categories. Tech: Streamlit, Python, Custom Model Training, Stable Diffusion, Gemini Model,Firebase,SQLite.

- **Parkinson Disease Prediction using Voice Data**: Developed a machine learning model using H-Bagging, an enhanced ensemble classification approach, to accurately predict Parkinson's disease from voice data. The model utilized heterogeneous classifiers (SVM, Naïve Bayes, KNN, Decision Trees, and Logistic Regression) and achieved superior accuracy by focusing on misclassified samples through a novel M-Bootstrapping technique.Tech: Python, Tonal Analysis, Classification Algorithms

- **Football Match Outcome Predictor**: Predicted the outcome of football matches for top leagues based on the last 25 years' results using a preprocessing pipeline with numerical and categorical feature transformations. Trained separate RandomForestRegressor models for home and away team goals prediction, achieving an RMSE of 1.03. Tech: Streamlit, Python, Supervised Learning, Ensemble models.

- **Safar Saathi**: Developed an AI-powered trip planner offering unbiased travel recommendations and a virtual tour feature. Integrated an Augmented and Modified AI model to provide personalized travel plans, allowing users to customize their holidays independently of travel agencies. Implemented 2-Factor Authentication using Backend as a Service (BaaS) for enhanced security, and leveraged serverless backends to ensure scalability and protection against data breaches and server attacks. Tech: React + Vite.js, Tailwind CSS, Daisy UI, GCP, AWS, Google Maps Platform, Predictive Systems, Firebase, Node.js

VOLUNTEER EXPERIENCE

- **Google Developer Student Clubs NSEC** — Kolkata, India
  Artificial Intelligence & Machine Learning Lead — *September 2024 - Present*

- **Google Developer Student Clubs NSEC** — Kolkata, India
  Cloud Core Team Member — *September 2023 - September 2024*