Subhadeep Sengupta

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Education

University of Georgia — Athens, GA
Master of Science in Artificial Intelligence — *Aug. 2025*

- GPA: 3.68/4.0
- Coursework: Data Mining, Deductive Systems, Biomedical Imaging, Machine Learning for Computer Vision, Decision Making Under Uncertainty, Ethics and AI, Knowledge-Based Systems

National Institute of Technology Karnataka — Karnataka, India
Bachelor of Technology in Electronics and Communication Engineering — *May 2022*

- GPA: 7.49/10.0
- Coursework: Computer Programming, Linear Algebra and Probability Theory, Engineering Mathematics

Experience

Undergraduate Research Intern — May 2021 – July 2021
National Institute of Technology Karnataka — *Karnataka, India*

- Developed a machine learning pipeline for detecting bradycardia from ECG signals using handcrafted features and ensemble learning to improve classification performance.
- Work resulted in a peer-reviewed publication in the International Journal of Information Technology.

Projects

Freight Demand Forecasting | *Python, Pandas, Statsmodels, FastAPI*

- Performed exploratory data analysis on 10+ years of Georgia freight data (FAF) and joined with median income, retail trade GDP (FRED), and population (US Census) data.
- Trained a SARIMAX model for single-step-ahead prediction of freight value and tonnage across 4 customer-related commodity types achieving ∼6% average forecasting error for 1 year prediction.
- Built a minimal FastAPI interface to serve predictions, enabling user input and result display via HTML forms.

Spotify Listening Data Tracker | *Python, Spotify Web API*

- Built an application using Spotify Web API to collect listening history, amassing over 3,400 records across 6 months.
- Implemented multiple timestamp formats (ISO, IST, EST) to ensure unique record identification and prevent data duplication.
- Enabled metadata capture such as artist, genre, and track duration for potential analytics.

Flow Cytometry Cell Classifier | *Python, PyTorch, GPT-4o*

- Trained a CNN achieving 87% accuracy on over 2,000 manually labeled flow cytometry images.
- Explored few-shot learning via GPT-4o, reducing training sample requirements by ∼80%.

Technical Skills

Languages: Python, C/C++, SQL, HTML
Libraries: PyTorch, TensorFlow, Pandas, NumPy, Matplotlib, SciPy, Plotly, Scikit-learn, Statsmodels, FastAPI
Developer Tools: Git, PyCharm, VS Code, Visual Studio, IntelliJ, Jupyter

Publications

Detection of bradycardia from electrocardiogram signals using feature extraction and snapshot ensembling — May 2022
International Journal of Information Technology

- Authors: Subhadeep Sengupta, Veena Mayya, S. Sowmya Kamath
- doi.org/10.1007/s41870-022-00963-4