MAINAK MALAY SAHA

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EDUCATION

Master of Science in Robotics and Autonomous Systems (Artificial Intelligence) **May, 26**
Arizona State University, United States 3.56 GPA

- Relevant Coursework: Artificial Intelligence, Robotics System I, Real-Time Embedded Systems, Machine Learning Acceleration, Knowledge Representation & Reasoning, Space Robotics & AI.

Bachelor of Engineering in Computer Engineering **June, 24**
Terna Engineering College, India 3.3 GPA

PROFESSIONAL SKILLS AND CERTIFICATES

- **Programming Languages:** Python, SQL, C, C++, JavaScript (React JS, Node.js), MongoDB.
- **Data Science & Machine Learning:** Pandas, NumPy, Scikit-learn, TensorFlow, Keras, PyTorch, OpenCV, NLTK, Hugging Face Transformers, Lingua Franca.
- **Data Engineering & Big Data Tools:** Azure Data Studio, Azure Notebooks, Docker, AWS (S3, EC2), Firebase, ETL Pipelines, MLOps, Git, REST APIs.
- **Databases & Data Management:** MongoDB, SQL, NoSQL, Data Warehousing Concepts, Data Preprocessing, Feature Engineering.
- **Visualization & Analytics Tools:** Tableau, Power BI, Matplotlib, Seaborn, Excel (Advanced), Google Data Studio.
- **Cloud Platforms:** AWS, Azure, Google Cloud (basic familiarity).

EXPERIENCE

Data Engineering Intern **March 25 – Present**
Looqup.AI, Boston, USA.

- Developed division-specific revenue forecasting models using Holt's Winter and SARIMA, improving sales prediction accuracy for individual merchants.
- Led data preprocessing and feature engineering using Azure Data Studio and Azure Notebooks, preparing high-quality datasets for model training.
- Contributed to building an end-to-end MLOps pipeline and gained hands-on experience with Docker for model containerization and backend integration.
- Enabled more accurate monthly revenue forecasts, empowering leadership to make data-driven, strategic business decisions.

Full-Stack Developer & Marketing **Aug, 21 - Dec, 22**
The Language Network, India.

- Developed the website for The Language Network from the bottom up, overseeing the development of the front-end (HTML, CSS, JavaScript, React JS) and back-end (Node.js, MongoDB) components.
- Collaborated with cross-functional teams, leading to a scalable, user-friendly solution integrated with 5+ third-party services and ensuring optimal performance.
- Utilized SEMrush and SEO strategies, resulting in a 60% increase in search engine visibility and a significant improvement in keyword rankings, with 10+ keywords reaching the first page.
- Succeeded in having a 50% increase in website traffic and user engagement, aided in the firm's overall growth.

PROJECT

Emotion Classification – Distinguishing Excitement and Fear from Physiological Data **PRESENT**

- Developed machine learning models to analyze biometric signals (heart rate, SPO2) for differentiating excitement and fear in real-time.
- Applied signal processing techniques for feature extraction and data preprocessing, enhancing model performance.
- Implemented statistical and AI-based analysis (CNN, LSTMs) to improve classification accuracy.
- Conducted model validation using real-world datasets, optimizing detection algorithms for deployment.

Real-Time Twitter Sentiment Monitoring **Mar24**

- Developed a real-time sentiment monitoring system by integrating Twitter's API with machine learning models (Logistic Regression and fine-tuned BERT) to classify live tweets into positive, negative, or neutral categories.
- Built and optimized preprocessing pipelines using NLP techniques (tokenization, cleaning, stopword removal) and achieved scalable performance by handling 50K+ tweets daily with robust rate-limit management.
- Enabled real-time brand sentiment tracking by fine-tuning a BERT-based deep learning model, achieving high classification accuracy and saving periodic monitoring results for business insights.

Fraud Detection in UPI Transaction Using AI - Published **April 24**

- Created an adaptive weighted fusion classifier combining Random Forest, Naive Bayes, and SVM to boost fraud detection.
- Incorporated location data tracking to identify anomalous transaction patterns, detecting 80% of geographic inconsistencies in UPI transactions.
- Enhanced fraud detection precision by leveraging location-based insights, reducing false positives by 25%, and improving detection of suspicious activities.

VOLUNTEERING

Volunteer-Panelist, ASU International Student welcome event **Jan 24**

- Participated as a panelist at the ISSC Downtown Phoenix International Student Orientation, sharing insights on navigating academic and cultural life at ASU.