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 3.71 GPA

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

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

TECHNICAL SKILLS

- **Programming Languages:** Python, SQL, C, C++, JavaScript (React JS, Node.js),TypeScript, 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

Graduate Research Assistant, *ASU Center for Engagement Science – Adidas, ASU.* **May 25 – Present**

- Collaborating with Dr. Aurel Coza on a multidisciplinary research project focused on motion analysis and real-time feedback for athletic performance.
- Developing an iOS application using Swift that integrates OpenCV for real-time video processing and motion detection.
- Designing and implementing algorithms to analyze human movement patterns and provide actionable feedback for enhanced physical training outcomes.
- Working closely with UI/UX and data science teams to ensure usability, performance, and data accuracy.

Data Engineering Intern, *Looqup.AI, Boston, USA.* **Mar 25 – Apr 25**

- Developed division-specific revenue forecasting models using Holt's Winter and SARIMA, improving sales prediction accuracy for individual merchants.
- Spearheaded data preprocessing and feature engineering using Azure tools, enhancing dataset quality for superior model accuracy.
- 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, *The Language Network, India* **Aug, 21 - Dec, 22**

- 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. .

Fraud Detection in UPI Transaction Using AI **Apr 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.

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