

Mainak Malay Saha

 +1 623-414-8522 |  msaha4@asu.edu |  linkedin.com/in/mainaksaha08 |  mainaksaha.in

Objective

Motivated Software Engineer with hands-on experience in full-stack development, data engineering, and applied machine learning. Skilled in designing scalable systems, building intuitive user interfaces, and deploying data-driven solutions using modern frameworks and cloud platforms. Strong foundation in computer science principles, with proven ability to learn new technologies quickly and collaborate across technical and non-technical teams. Passionate about developing impactful software that solves complex real-world problems.

Education

Arizona State University (ASU)	<i>12/2025</i>
Master of Science in Robotics and Autonomous Systems (Artificial Intelligence)	GPA: 3.71
<i>Relevant Coursework:</i> Artificial Intelligence, Real-Time Embedded Systems, Machine Learning Acceleration, Knowledge Representation & Reasoning, Space Robotics & AI, Data Visualization, Distributed Systems.	
Terna Engineering College, India	<i>06/2024</i>
Bachelor of Engineering in Computer Engineering	GPA: 3.3

Technical Skills

Programming & Scripting: Python, C++, JavaScript (React.js, Node.js), TypeScript, SQL, Rust
Web Development: HTML5, CSS3, Responsive UI Design, Full-Stack Development, API Integration
Cloud & DevOps: AWS (EC2, S3), Azure, Docker, Git, CI/CD, REST APIs
Data Science & ML: TensorFlow, PyTorch, scikit-learn, OpenCV, Pandas, NumPy, MLOps
Data Engineering & Analytics: MongoDB, Data Pipelines, Feature Engineering, Spark, Cassandra
Visualization & BI: Tableau, Power BI, Matplotlib, Seaborn, Excel (Advanced)

Experience

Graduate Research Assistant , ASU Center for Engagement Science — Adidas, ASU	<i>05/2025 – Present</i>
• Collaborated with Dr. Aurel Coza on a multidisciplinary project integrating real-time video analytics and motion analysis for enhanced athletic performance feedback.	
• Engineered video processing pipelines using Swift and OpenCV to detect and classify human movement patterns in real time, supporting future applications in audience engagement analytics.	
• Designed and implemented algorithms to extract actionable insights from visual and biometric data, simulating decision models relevant to CTV ad interaction and personalization.	
• Worked cross-functionally with UI/UX and data science teams to ensure system performance, usability, and data fidelity in mobile deployment environments.	
Graduate Research Associate , TEAL Lab — Arizona State University, Tempe, USA	<i>08/2025 – 10/2025</i>
• Built the <i>Audio-Vibration Rating Explorer</i> , an interactive web application to evaluate how four vibration designs map to 1,000+ real-world sounds (4,000+ ratings).	
• Designed and deployed a real-time audio-to-vibration generation system, leveraging ML models for feature extraction, classification, and vibration mapping.	
• Implemented synchronized audio & vibration playback with real-time waveform and spectrogram visualization (WaveSurfer.js), including A/B comparison across designs.	
• Optimized deployment and scalability by using AWS EC2 for hosting and model inference, ensuring low-latency interaction and robust performance.	
Full-Stack Developer , The Language Network, India	<i>08/2021 – 12/2022</i>
• Designed and developed a full-stack web platform and LMS using React.js, Node.js, and MongoDB, enabling scalable user management and seamless integration with 5+ third-party marketing tools.	
• Implemented SEO/SEM strategies using SEMrush and Google Analytics, increasing search engine visibility by 60% and driving 10+ high-value keywords to first-page ranking.	
• Built custom dashboards using Salesforce and other analytics tools to monitor user engagement, traffic analytics, and campaign conversion metrics, contributing to a 50% increase in overall site traffic and interaction rates.	
• Collaborated with content, marketing, and product teams to optimize platform performance, enhance UI/UX, and support growth marketing initiatives.	

Project

Emotion Classification — Distinguishing Excitement and Fear from Physiological Data	<i>Present</i>
• Developed ML models to classify biometric signals (heart rate, SpO ₂) and distinguish between excitement and fear in real time, simulating audience engagement monitoring for CTV environments.	
• Applied advanced signal processing for feature extraction and improved classification accuracy using CNN and LSTM architectures.	
• Validated models using real-world physiological datasets and optimized for real-time deployment, emphasizing performance and responsiveness.	
• Designed interactive visualizations using Matplotlib and Seaborn to represent emotional state transitions, signal patterns, and model performance metrics.	