ABHIJEET SAHDEV

@ as4673@njit.edu   🔗 jeet1912.github.io   in abhijeet-sahdev   ⌨ jeet1912   📍 Newark, NJ

SUMMARY

Machine Learning Engineer skilled in full-stack development, cloud infrastructure, and large-scale dataset engineering. Experienced in building and deploying end-to-end ML systems that improve accuracy, efficiency, and scalability.

EXPERIENCE

Research Assistant

Immersive Creation Lab   **[Code]**

📅 May 2025 – Ongoing   📍 Remote

- Developed a web-based 3D Copilot, an innovative research prototype for ACM UIST 2026, enabling natural language-driven 3D scene manipulation using React and Three.js.
- Designed an interactive UI with a shape palette, object manipulator, and real-time 3D canvas featuring raycasting, transform controls, and OrbitControls, optimizing usability and supporting precise object manipulation.
- Implemented Sketchfab API integration for seamless 3D model retrieval, incorporating ZIP extraction with JSZip for GLTF/GLB handling, model normalization, and efficient blob URL management to enhance scene integration and rendering.
- Integrated LLMs such as OpenAI's GPT-4o-mini, LLama-8b and Gemini via a Node.js/Express backend to parse complex user commands, supporting actions like adding shapes, manipulating objects, and searching Sketchfab.
- Planned outcome: Production-ready tool for end-user deployment, with initial release expected in coming months.

Graduate and Undergraduate Teaching Assistant

NJIT

📅 Aug 2024 – Dec 2024   📍 Newark

- Responsible for grading various phases of capstone project and setting up evaluation metrics for assignments of CS Data Mining for 20+ students.
- Invigilated mid-term exams for DS Machine Learning course for 70+ students.

Software Engineering Intern

MyHealthToday   **[Report]**

📅 Dec 2020 – Jun 2021   📍 Remote

- Developed a cross-platform front-end using React for web browsers and React Native for mobile apps, ensuring responsiveness across devices through collaboration with the CTO and technical problem solving.
- Created comprehensive test suites to verify application adherence to design specifications and compatibility with target customer devices, enhancing reliability.
- Implemented design patterns (adapter, state, observer) using React-Redux while typing maintainable code to establish a single source of truth, optimizing state management for the mobile app.
- Standardized record formats in DynamoDB tables via scripting, proactively preventing future run-time errors.
- Developed microservices using serverless AWS Lambda in a distributed, event-driven architecture, contributing to a scalable and fault-tolerant backend serving both mobile and Alexa applications.
- Designed, implemented, and deployed RESTful APIs using SAM CLI and AWS CI/CD tools, streamlining resource creation and reducing client-side processing time by **16%**.

PUBLICATIONS

Statistical Analysis of Sentence Structures through ASCII, Lexical Alignment and PCA

A. SAHDEV   **[Report][Code]**

📅 Oct 2024 – Mar 2025

EDUCATION

MS in Artificial Intelligence

New Jersey Institute Of Technology   **CGPA: 3.86/4**

📅 Jan 2024 - Dec 2025   📍 Newark, NJ

B.Tech in Computer Science and Engineering, Minor in Computational Mathematics

MIT, Manipal Academy of Higher Education

📅 Jun 2017 – Aug 2021   📍 Udupi, India

PROJECTS

GIT-base Ablation Study

PyTorch   **[Report][Code]**

📅 Jul 2025 – Aug 2025

- Engineered and preprocessed MIMIC-CXR-JPG v2.1.0 (377K+ chest X-rays, 227K reports) via GCP BigQuery and CheXpert, generating structured mini-reports and building a balanced 66K+ study dataset with robust stratified splits.
- Implemented and benchmarked GIT-base vision–language (VLM)architecture under Full Fine-Tuning vs. LoRA (vision-only, text-only), designing a resource-optimized training strategy that reduced GPU memory usage by 50% and training time by 67%.
- Demonstrated **5.8×** improvement in BLEU with LoRA Text-Only over full fine-tuning, validating LoRA as a parameter-efficient and domain-adaptive strategy for medical vision–language tasks.

Sepsis Treatment With Deep RL

PyTorch   **[Report] [Code]**

📅 Jun 2025 - Aug 2025

- Implemented a reinforcement learning framework (WD3QNE) for ICU sepsis treatment, replicating published results across 8 experiments with 45 vs. 43 feature sets obtained after sequential backward selection.
- Processed and curated MIMIC-III data (14,505 patients, 344,800 records) using hierarchical time-aware imputation and Sepsis-3 cohort selection.
- Trained agents over 100 epochs, achieving structured 5×5 fluid/vasopressor policies aligned with clinician behavior and robust survival outcomes.

Open Source Contribution

React Native   **[Pull Request]**

📅 Feb 2021 – Mar 2021

- Introduced a boolean argument to display number of selected_items in react-native-multiple-select by toystars **[550+ stars, 500k+ downloads]**.

SKILLS

- **Languages:** Python, Javascript, C++, Java, Dart
- **Databases:** MySQL, DynamoDB
- **ML/DL :** scikit-learn, PyTorch, TensorFlow
- **Cloud & Infra :** Git, AWS, GCP, Docker
- **Frameworks:** Django, React, React Native, Flutter