SAHIL BANERJEE

MACHINE LEARNING ENGINEER

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JAIPUR, RAJASTHAN

OBJECTIVE

Aspiring Machine Learning and AI Engineer with a solid foundation in Python, computer vision, and practical experience in developing AI-driven applications. Currently pursuing a Bachelor's degree in Artificial Intelligence and Data Science, with hands-on experience in building innovative projects, including a smart fitness tracker app utilizing OpenCV for real-time pose estimation and personalized workout recommendations. Recently won first prize in a national hackathon organized by the Institution Innovation Cell (IIC), Ministry of Education, for developing an app focused on the sports and health industries. Driven by a passion for applying machine learning to solve real-world challenges and eager to contribute to impactful projects in AI and data science.

SKILLS & ABILITIES

- **Programming Languages**: Python, C++
- **Machine Learning Libraries**: TensorFlow, Keras, Scikit-Learn
- **Computer Vision**: OpenCV, MediaPipe (for real-time image and video processing)
- **Data Analysis & Visualization**: Pandas, NumPy, Matplotlib, Seaborn
- **Tools & Platforms**: Jupyter Notebook, Git, Docker, Pycharm, VScode
- **Natural Language Processing**: Whisper AI (for speech-to-text) and OpenAI TTS (for text-to-speech synthesis)
- **Project Experience:** Developing AI applications for the sports, health, and retail industries with a focus on real-world solutions and user engagement

EDUCATION

- **Bachelor of Technology (B.Tech) in Artificial Intelligence and Data Science**
  Government Engineering College of Bikaner, Bikaner, Rajasthan
  Expected Graduation: August 2025
  Current CGPA: 7.41
- **Intermediate (12th Grade) in Science Stream (PCM: Physics, Chemistry, Mathematics)**
  Ryan International School, Jaipur, Rajasthan (CBSE)
  Result: Scored 84.2%
- **High School Diploma (10th Grade)**
  Ryan International School, Jaipur, Rajasthan (CBSE)
  Matriculation Exam: Scored 87.8%

WORK EXPERIENCE

Mediapipe Engineer Intern
The Tann Mann Foundation, Bengaluru
September 2024 - November 2024

Computer Vision Clothing Measurement Project

- Developed a computer vision solution to estimate clothing measurements (e.g., shoulder width, chest/bust, waist, and length) from images and videos, targeting a 40% accuracy rate for contactless fit recommendations.
- Utilized MediaPipe and computer vision algorithms to capture body dimensions based on front, side, and back images using mobile and desktop cameras.
- Optimized algorithms for contactless measurement, allowing users to receive accurate size recommendations without physical interaction.
- Conducted testing with multiple participants and refined the model to improve reliability and prepare it for team expansion.

Voice Bot Project – AI Retail Assistant for Fashion Store

- Built an AI-powered voice assistant to streamline data analysis for retail fashion store managers, enabling interaction with complex datasets via a natural voice interface.
- Developed automated data ingestion pipelines to process and analyze sales, inventory, and purchase data in Excel, ensuring compatibility across various file formats.
- Implemented data analysis features using Python (Pandas, NumPy) to identify trends like sales seasonality and inventory turnover, and created visualizations using Matplotlib and Plotly for enhanced data interpretation.
- Integrated Whisper AI for speech-to-text to allow store managers to query the assistant with natural language, paired with text-to-speech (TTS) to provide human-like responses to questions such as “What are the top-selling products this quarter?”
- Collaborated on predictive modeling to forecast sales and optimize inventory management, enabling store managers to make data-driven decisions with ease.

PROJECT EXPERIENCE

Smart Fitness Tracker App

- Collaborated with a team to develop a smart fitness tracker app that utilizes AI to monitor and analyze user activity, providing real-time feedback and customized workout plans.
- Leveraged OpenCV for real-time video processing and pose estimation to ensure accurate tracking of user movements.
- Implemented machine learning algorithms to personalize workout recommendations based on user data and performance metrics.
- Featured in Catch News and Rajasthan Patrika for innovative application of AI in fitness tracking Read More.

Many more on my GitHub repo

CERTIFICATIONS

- IBM Data Science – Click Here
- **First Prize in Hackathon by Institution Innovation Cell (IIC), Ministry of Education (MoE)** Developed an application for the sports and health industries, earning top honors for innovation. **Certificate Link:** View on Linkedin