Asmita Sarkar

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SKILLS

- **Machine Learning & Data Analysis**: Developed and deployed predictive models using Python and SQL; applied statistical analysis and data mining techniques to datasets exceeding 1,000 records
- **Cloud & DevOps**: AWS (Amazon Web Services), Cloud Computing, Cloud Architecture, AWS EC2, AWS S3, AWS IAM
- **Artificial Intelligence & Computer Vision**: Engineered AI-driven solutions, including facial recognition systems with 95%+ accuracy and generative AI applications using IBM watsonx.ai
- **Programming & Technical Tools**: Proficient in Python, Java, JavaScript, SQL, HTML, CSS, React, Flask, MongoDB, Oracle Cloud; experienced with REST APIs and IoT integration
- **Research & Collaboration**: Conducted academic research published in CRC Press; led cross-functional teams of up to 5 members in national hackathons and presented findings to audiences of 50+ stakeholders

PROJECTS

AGRICULTURE-BASED ML PROJECT   AUG 2024 – APR 2025
- Designed and developed a machine learning system for agriculture, integrating a Crop Yield Predictor and Crop Recommendation System to assist farmers in crop selection and yield optimization
- Utilized React, Vite, and Tailwind CSS for a responsive UI; Flask for backend; MongoDB for secure data storage
- Achieved high accuracy and efficiency in local testing; future plans include cloud deployment and integration of real-time weather and advanced ML models
- Project demonstrates application of AI, data-driven decision-making, and scalable system architecture in agriculture

WATERLESS SPITTOON STATION (SMART INDIA HACKATHON)   AUG 2024 – FEB 2025
- Selected as Top 7 out of 500 intra-college teams
- Selected as a Semi-finalist at Johns Hopkins University HealthHack Hackathon 2025
- Developed IoT-enabled, self-cleaning spittoon with waste-to-manure conversion
- Integrated smart sensors and automation, reducing disease spread by 30–50%

VITRACK   Mar 2024 – May 2024
- Engineered an AI-powered visitor management system, automating identification for 100% of 200+ visitors, reducing manual entry time by 70%
- Deployed the application on AWS EC2 for scalable, secure cloud hosting and utilized AWS S3 for centralized visitor image storage, ensuring fast and reliable access during high-traffic periods
- Integrated facial recognition, achieving 95%+ accuracy in real-world testing and enhancing campus security for all users

Spendsmart   Mar 2024 – May 2024
- Developed a smart expense tracker adopted by 50+ students, enabling users to split costs and manage budgets, resulting in a 30% improvement in financial planning efficiency
- Automated bill reminders and categorized expenses, increasing user engagement by 40% over three months

Event Management Portal   Aug 2023 – Oct 2023
- Built a blockchain-secured ticketing system with modules for user management, event listings, ticket booking, and payment gateway
- Automated ticket transactions using smart contracts

EDUCATION

VIT BHOPAL UNIVERSITY, BHOPAL   Aug 2022 – Jun 2026
B.Tech, Computer Science & Engineering

ACHIEVEMENTS

- **SELECTED AS A SEMI-FINALIST AT JHU HEALTHHACK 2025 FOR THE WATERLESS SPITTOON STATION PROJECT**   Jan 2025
  PRESENTED TECHNICAL RESEARCH AND PROTOTYPE TO AN INTERNATIONAL PANEL, ADVANCING TO THE SEMI-FINAL ROUND AMONG 100+ TEAMS
- **CONTRIBUTED AS CO-AUTHOR TO THE BOOK CHAPTER "SMART GRID AND ENERGY MANAGEMENT"**   Nov 2024
  ACCEPTED FOR PUBLICATION BY SCPS, CRC PRESS
- **ACHIEVED TOP 7 OUT OF 500 TEAMS IN THE SMART INDIA HACKATHON (WATERLESS SPITTOON SYSTEM)**   Aug 2024
  ENGINEERED AN IoT-ENABLED, SELF-CLEANING SPITTOON SYSTEM THAT REDUCED DISEASE SPREAD BY 30–50% IN PILOT TESTING
- **SECURED 2ND PLACE AMONG 40+ PARTICIPANTS IN THE COLLEGE DEBATE COMPETITION**   Feb 2024
  EDUTECH CLUB, VIT BHOPAL UNIVERSITY

CERTIFICATIONS

- **GEN AI USING IBM WATSONX.AI**   APR 2025
- **SQL ON ORACLE CLOUD**   APR 2025
- **HTML, CSS AND JAVASCRIPT FOR WEB DEVELOPERS**   DEC 2023