SAARANSH JOHRI

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SUMMARY

Aspiring Machine Learning Engineer with a solid foundation in software development and data processing, complemented by coursework in AI and data science. Eager to leverage technical expertise and innovative thinking to contribute to impactful machine learning projects.

EDUCATION

MIT World Peace University, Pune **Aug 2023- Aug 2027**
Department of Computer Science & Engineering

- Bachelor's of Technology - Computer Science (AI & DS)
- 8.47 GPA - Till 4th Semester

TECHNICAL SKILLS

Languages: Python, C/C++, HTML, CSS, JavaScript, SQL
Technologies: Machine Learning, CNN, Git/GitHub, OpenCV, MySQL, Raspberry Pi, Tableau
Tools & Frameworks: Unix/Linux, Pandas, NumPy, Basic Flask, VS Code
Related Work: Data Structures & Algorithms, Operating Systems, Machine Learning, Database Management Systems, Artificial Intelligence, Software Engineering, OOPs

SOFT SKILLS

- Presented project outcomes and research findings to peers and faculty.
- Contributed to team success by supporting peers and sharing feedback constructively.
- Collaborated with cross-functional teams during hackathons and team projects.
- Communicated technical concepts effectively to both technical and non-technical audiences.

PROJECTS

1. **BETAAL AI ASSISTANT**

- Implemented real-time web scraping and summarization pipelines using NLP models (NLTK, Transformers).
- Integrated generative image models (HuggingFace API) to convert textual input into high-resolution outputs.
- Developed a context-aware Q&A engine using pre-trained LLMs.
- Enabled system-level automation with Python scripting for natural language-based execution of reminders, file ops, and app control.
- Designed an adaptive user profiling system leveraging behavioral tracking and rule-based learning for personalized responses.

2. **STATIC SITE DEPLOYMENT FOR A COMPANY**

- Developed a fully responsive static website using HTML5, CSS3, and Flexbox/Grid for layout design.
- Implemented modular UI components for sections like company profile, product catalog, services, and contact form.
- Applied mobile-first design principles, ensuring cross-device compatibility and performance optimization.
- Enhanced UX/UI through intuitive navigation, clean visual hierarchy, and semantic HTML structure to boost SEO and engagement.

3. **30-DAY READMISSION PREDICTION OF DIABETIC PATIENTS**

- Developed a machine learning model to predict the probability of 30-day hospital readmission in diabetic patients using a real-world healthcare dataset.
- Preprocessed over 100,000 patient records by handling missing values, encoding categorical variables, and feature engineering from diagnosis codes (ICD).
- Applied SMOTE (Synthetic Minority Over-sampling Technique) to address class imbalance in the "readmitted" target variable.
- Trained multiple models (Random Forest, XGBoost, Logistic Regression), with Random Forest achieving the best performance.
- Evaluated models using metrics like accuracy, F1-score, ROC-AUC, and confusion matrix to ensure generalizability.

4. **MOVIE RECOMMENDATION SYSTEM**

- Developed a deep learning recommendation system using CNNs and embedding layers to model user–item interactions.
- Engineered features from metadata, genres, and behavioral logs, leveraging Pandas, NumPy, and SQL for large-scale preprocessing (100k+ records).
- Constructed user-item interaction matrices and optimized with embedding-based collaborative filtering techniques.
- Evaluated model using Precision, Recall, and NDCG, achieving ~90% accuracy.
- Designed and deployed scalable data pipelines for efficient model training and reproducibility.

5. **BINARY IMAGE CLASSIFICATION**

- Designed and implemented a Convolutional Neural Network (CNN) architecture for binary image classification tasks.
- Applied data preprocessing techniques including resizing, normalization, and real-time data augmentation (rotation, zoom, shift) using Keras ImageDataGenerator.
- Optimized model performance with dropout layers, L2 regularization, and early stopping to mitigate overfitting.
- Achieved efficient convergence using Adam optimizer and binary cross-entropy loss on preprocessed datasets.

ACTIVITIES, CERTIFICATIONS & ADDITIONAL INFORMATION

- **Languages:** English (fluent), Hindi (native)
- **Certifications:**
  1) AI/ML Specialization – Pregrad
  2) Computer Vision Masterclass – Udemy
  3) AI Foundations – IBM Cognitive Class
- **Activities & Achievements:**
  1) Participated in national and university-level hackathons, coding contests, and technical competitions.
  2) Experienced in handling and processing large-scale datasets (100k+ records) for real-world ML applications.
  3) Actively working on research papers and publications in machine learning and healthcare analytics.

Deloitte Australia – Data Analytics Job Simulation (Forage) July 2025

- Completed a Deloitte job simulation involving forensic technology and data analysis
- Created a data dashboard using Tableau
- Used Excel to classify data and draw actionable business conclusions