

Shashank Shatraboina

Github: github.com/ShashankShatraboina

Google Scholar: scholar.google.com/citations?user=d9_mz4YAAAAJ&hl=en

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Hyderabad, India

EDUCATION

- CMR Engineering College** Hyderabad, India
Bachelor of Technology – Computer Science & Engineering; CGPA: 8.10/10 2022 – 2026
Relevant Coursework: Design and Analysis of Algorithms, Data Structures, Operating Systems, Data Mining, Machine Learning, Big Data Analytics, Automata Theory & Compiler Design, Software Engineering, Database Management Systems, Computer Organization & Architecture

EXPERIENCE

- Indian Institute of Technology Roorkee (IIT Roorkee)** Roorkee, India
ML Research Intern Jan 2026 – Present
 - AI/ML & Big Data:** Developed 20+ AI/ML and Big Data Analytics modules with hands-on implementations covering deep learning, LLMs, Hadoop, Spark, NoSQL, and real-time stream processing.
 - Scalable ML Pipelines:** Engineered distributed ML pipelines using Python, Pandas, Scikit-learn, PySpark, Hadoop (HDFS, MapReduce, YARN), and Apache Spark for batch and streaming applications.
 - Parkinson's Disease DBS Optimization:** Designed an fMRI-guided deep learning framework using BOLD-fMRI data from 39 patients, achieving 96% classification accuracy and 0.98 AUC with Autoencoder and MLP models.
- CMR Engineering College** Hyderabad, India
Undergraduate ML Research Assistant Oct 2023 – Jan 2026
 - UAV Road Damage Detection:** Benchmarked YOLOv4/v5/v7 and YOLOv5 with Transformer Prediction Head (TPH) across multi-country UAV datasets, achieving 73.2% mAP@0.5 with YOLOv7 and 87 FPS real-time inference.
 - AI-Driven Medical Diagnosis:** Evaluated SVM, KNN, Random Forest, CNN, and RNN models across 10+ diseases, achieving 95.6% breast cancer, 98.3% kidney disease, 97.2% COVID-19, 90.3% Parkinson's, and 83% heart disease accuracy.
 - Sustainable Mobility:** Analyzed Li-ion battery technology, V2G infrastructure, and CO₂ reduction strategies for sustainable electric vehicle adoption.
- CMR Engineering College** Hyderabad, India
DSA Trainer / Teaching Assistant Nov 2024 – Dec 2025
 - Training:** Trained 77 students in recursion, graphs, and dynamic programming through competitive programming modules, improving code optimization by 20%.
 - Placement Impact:** Supported 58 students in securing campus placements through structured DSA training and problem-solving practice.
 - Content Development:** Created 32 original DSA problems with editorial solutions and peer discussion threads, including Python and C++ curriculum simulations for time complexity and DP state transitions.
- eQUORSE Pvt. Ltd.** Kota, India
AI Trainee Intern Jul 2025 – Nov 2025
 - AI Curriculum:** Designed an AI/ML curriculum for school students covering supervised learning, neural networks, and model evaluation through hands-on modules and assessments.
 - Student Mentoring:** Delivered interactive doubt-solving sessions and evaluated 30+ student projects, improving concept retention by approximately 40% through personalized feedback.
 - Assessment:** Created quizzes and mini-projects, including linear regression from scratch, achieving 85%+ student comprehension in post-module evaluations.
- Wyreflow Technologies Pvt. Ltd.** Bangalore, India
Technical Tester / QA Intern Oct 2024 – Nov 2024
 - Test Automation:** Automated regression suites, reducing testing time by 40% while improving defect detection accuracy across web platforms.
 - Test Management:** Managed 50+ test cases using JIRA, enabling sprint coordination and cross-team defect tracking.
 - Quality Assurance:** Optimized QA workflows to achieve 99%+ pre-release defect capture and accelerate deployment cycles.
- Code Clause Pvt. Ltd.** Pune, India
Web Development Intern Aug 2024 – Sep 2024
 - AI Game Development:** Engineered a Human vs AI Tic-Tac-Toe game using the Minimax algorithm, achieving approximately 95% decision accuracy and under 50ms AI move calculation.
 - Web Application:** Built a responsive music player with dynamic playlist controls, achieving under 1.2s initial load and approximately 40% faster DOM updates through memoized event handling and lazy asset loading.
 - Accessibility:** Implemented WCAG 2.1 practices including keyboard navigation and ARIA labels, improving screen-reader compatibility by approximately 60%.

ACADEMIC PROJECTS

- **End-to-End Automated ML Pipeline [GitHub]:** Engineered an AutoML+MLOps platform automating preprocessing, model selection, hyperparameter tuning, and evaluation, reducing manual ML effort by 80%. Built a deployment-ready web application with real-time accuracy, F1, and ROC-AUC comparison and automated feature engineering, enabling 10x faster iteration.
- **UAV Images Pothole Prediction [GitHub]:** Built a ResNet101-based pothole detection model using transfer learning, data augmentation, dropout, batch normalization, and early stopping, achieving 97% accuracy.
- **Hybrid Network Analysis & ML for Financial Distress Prediction [GitHub]:** Developed a hybrid ML model combining financial ratios and network features for corporate financial distress prediction, achieving 92% accuracy and reducing false positives by 15% versus baseline models.
- **CineMaxx – Movie Recommendation System [GitHub]** **Jan 2025:** Implemented Matrix Factorization from scratch with explicit sparsity handling, achieving a 12% RMSE improvement on 500K+ TMDb embeddings. Engineered Redis-based caching to reduce queries by 40% and dynamic matrix caching to reduce cold-start latency by 65%, achieving sub-180ms response times for 1K+ concurrent users. “
- **ML-Based Multi-Disease Prediction System [GitHub]:** Built a clinical decision-support system for Diabetes, Heart Disease, Parkinson's, and Breast Cancer using Streamlit and XGBoost, achieving 96.2% diagnostic accuracy on Heart Disease and Parkinson's benchmark datasets. Designed a reproducible pipeline covering EDA, feature selection, and multi-classifier benchmarking.

PUBLICATIONS

- **An fMRI-Guided Deep Learning Framework for Rapid Semi-Automated Deep Brain Stimulation Optimization in Parkinson's Disease:** Shashank Shatraboina, Dr. Sudip Roy. Under Review at 7th IEEE ICIPCN 2027. [Paper]
- **Cognitive-Aware Enterprise Search Using Hybrid Semantic Retrieval and Human-in-the-Loop Feedback:** Shashank Shatraboina, Karthick Balakrishnan. Accepted at 7th IEEE ICICNIS 2026. [Paper]
- **DefectLens: Interpretable Ensemble Convolutional Networks for Artwork Defect Detection:** Raghuvamshi, Shashank Shatraboina, Dr. Kumara Swamy. Accepted at 2nd IEEE ICITSIF 2027. [Paper]
- **A Deep Learning Framework for Automated Road Surface Damage Detection using UAV Imagery:** Shashank Shatraboina, Vinod Upadhyay, MS Akbar, Dr. Praveen Chouksey. IEEE ICAUC 2026. [IEEE]
- **AI-Driven Medical Diagnosis: Integrating Fuzzy Logic, Machine Learning, and Deep Learning for Enhanced Clinical Accuracy:** Shashank Shatraboina, Dr. Mrutyunjaya S Yalawar. 2nd IEEE ICCICA 2025. [IEEE]
- **A Study on Electric Vehicles: Challenges and Their Barriers, A Review:** Shashank Shatraboina, Dr. Mrutyunjaya S Yalawar. 4th IEEE ICACRS 2025. [IEEE]
- **Federated and Collaborative Deep Learning Optimization in Cloud-Fog Computing:** M. Shmila, Shashank Shatraboina, Bhaskar, Dr. Zatin Gupta, Dr. Neha Khare, Dr. Shweta Bansal. IEEE ICETICS 2026. [IEEE]
- **Real-Time Cognitive and Academic Performance Tracking System for Adaptive E-Learning Applications:** DS Niharika, Shashank Shatraboina, Dr. Pankaj Agrawal, Dr. Alok Jain, Dr. Ankur Choudhary, SRV Prasad Reddy. 2nd IEEE ICBDMML 2026. [IEEE]
- **Evaluation of Various ML Models for the Identification of Epileptic Seizures:** Dr. Kiran, Rekha, Adilakshmi, Shashank Shatraboina, Romit Bhalla, Mayank Nagar. 5th IEEE ICTBIG 2025. [IEEE]
- **An Interpretable Machine Learning Model for Leukemia Diagnosis Using CNN-SVM and Explainable AI:** Dr. Vandana Roy, Dr. RP Ram Kumar, Shashank Shatraboina, Dr. Prakhar Gautam, Dr. Sandeep Pandey, G Kaushik. 5th IEEE ICTBIG 2025. [IEEE]
- **Machine Learning Models for Monitoring Environmental Impact on Public Health:** Dr. A. Akhila, Dr. Ankit Rawat, Dr. P. Deepthi, Shashank Shatraboina, Jitendra Prithviraj, Sanjay Yadav. 5th IEEE ICTBIG 2025. [IEEE]
- **Development of an Automated Deep Learning Framework for Early Detection and Diagnosis of Epileptic Seizures from Brainwave Patterns:** Dr. Sudeep, Dr. G.D Sowjanya, Laxmi NP, Dr. Rashi Saxena, Shashank Shatraboina, Vikash Varma. 5th IEEE ICTBIG 2025. [IEEE]

LEADERSHIP EXPERIENCE

- **CMR Engineering College** Hyderabad, India
• *AI Club & Coding Club – Lead Student Organizer* Jan 2025 – Dec 2025
 - **Technical Workshops:** Organized two AI and Competitive Coding workshops with 315 students, emphasizing hands-on learning and real-world applications.
 - **Hackathons:** Led two inter-collegiate hackathons with 44 participating teams, fostering technical innovation and cross-institutional collaboration.
 - **Student Representation:** Served as Department Student Representative, coordinating seminars and student initiatives connecting academic learning with industry practice.
- **National Service Scheme – Blood Donation Initiative** Hyderabad, India
• *Volunteer Coordinator* Dec 2023 – Oct 2024
 - **Community Impact:** Coordinated campus blood donation drives with the Thalassemia & Sickle Cell Society and CMR Hospital, mobilizing 328 student donors.
- **Sri Sai EM School** Hyderabad, India
• *Swachh Bharat Mission Volunteer* Mar 2019 – Dec 2019
 - **Community Service:** Participated in cleanliness and awareness drives and organized plantation activities promoting hygiene, sanitation, civic responsibility, and environmental sustainability.

ACADEMIC SERVICES

- Peer Reviewer for AI/ML tracks at the 10th ACM CSAE 2026, 11th IEEE RICE 2026, 8th IEEE ICCCMMLA 2026, IEEE CCIC 2026, IEEE GSEACT 2026, IEEE GSCON 2027, and Low-Altitude Vehicle Dynamics and Control Journal.

HONORS AND AWARDS

- Bharat Ratna Sri M. Visvesvaraya National Award – Conferred by The Institution of Engineers (India), Telangana State Center, for outstanding research and active participation in the All India Seminar on “Design and Development of Electric Vehicles and Its Challenges” (Nov 2024).

SKILLS SUMMARY

- **Languages:** C++, Python, Java, C, C#, SQL, NoSQL, HTML, CSS, JavaScript
- **ML/AI:** Scikit-learn, Pandas, TensorFlow, Keras, OpenCV, Matplotlib, Seaborn
- **Frameworks:** React.js, Node.js, Express.js, Django, Android
- **Big Data:** Hadoop, HDFS, MapReduce, YARN, Apache Spark, PySpark
- **Tools:** Git/GitHub, MongoDB, RESTful APIs, JIRA