Priyanshu Shah

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Professional Experience

Reetape Technology Udaipur, Rajasthan
Voice AI and Full-Stack intern Feb'24 - Present

- Built a Next.js-based web application integrating a fine-tuned LLaMA model for a real-time AI voice chat-bot, reducing response time from 8s to 1-2s, improving user satisfaction by 35%
- Implemented automatic silence detection and context-aware conversation flow, increasing user engagement by 25%.
- Optimized front-end performance and back-end API efficiency, reducing latency by 40%, with database control as well as client dashboard for analytics and statistics.
- Added features like multilingual voice support for Hindi, actively switching to real agents and client specific model fine tuning.

Education

Indian Institute of Technology Jodhpur Jodhpur, Rajasthan
B.Tech, Computer Science and Engineering, Sophomore, CGPA: 8.93 Aug'22 - May'27

Reliance Foundation School Surat, Gujarat
Class 10 CBSE: 96.2% Class 12 CBSE: 94.2% Apr'09-Mar'23

Projects

AlgoViz- Machine Learnin algorithm Visualizer Website
Python, Next.js, Scikit-learn, Flask, Google Cloud GitHub

- Developed a machine learning visualizer for dynamically interacting with various ML models like polynomial Regression, D trees, DBSCAN, K means, SVM, KNN, ANN, PCA and more.
- Used libraries like charts, graphviz and Pyplot. Used by institute professors in class.

ISRO IRoC Mars Drone
ROS2, Visual SLAM, Jetson Orin Nano, Gazebo, CNN GitHub

- Developed Visual SLAM for autonomous navigation in Martian environments, enabling GPS-independent operation with 85% localization accuracy.
- Implemented a RESnet based model to process depth point cloud data for safe landing zone detection with 90% precision.
- Simulated navigation and autonomous landing procedures in Gazebo using Mars terrain, with real-world validation on a Jetson Orin Nano-powered aerial vehicle.

Fault Tolerant Quadcopter Flight Controller
C++, PX4 Autopilot, Control Algorithms, PID Tuning GitHub

- Modifying the PX4 Autopilot in C++ to detect single motor failure and implementing a custom stabilization algorithm, reduced emergency landing velocity by 80%.
- Designed and tested control strategies by actively switching the control allocation, for stable hover and return-to-launch, achieving a 90% success rate in stable emergency landings.

Blockshare: Ethereum-Inspired Blockchain Ledger
C++, Node.js, P2P Networking, MERN Stack, Merkle Patricia Tree GitHub

- Engineered a decentralized blockchain ledger inspired by Ethereum, implemented P2P networking and tamper-proof transactions, improving transaction efficiency by 40%.
- Built a full-stack blockchain system with core blockchain operations in C++, a Node.js network layer, and a MERN-based user interface, ensuring scalability and robust performance, handling over 1,000 transactions/second.
- Included features such as transaction processing and validation, account balance management and digital signature verification.

Skills

- **Languages:** C++, C, Python, JavaScript, HTML, CSS, SQL
- **ML/AI:** TensorFlow, Keras, PyTorch, NumPy, Pandas, Scikit-learn, Matplotlib
- **Development:** Next.js, Django, Node.js, Express.js, mySQL, MongoDB, JSON, XML, React.js, Bootstrap, Tailwind CSS
- **Tools:** Git, GitHub, Docker, Postman

Relevant Coursework

- **Academic Courses:** Data Structures and Algorithms, Pattern Recognition and Machine Learning, Approximation Algorithms, Maths for Computing, Introduction to CS, Linear Algebra and Calculus, Intro to Quantum computing
- **External Courses:** Coursera Data Structures and Algorithm Specialization, Coursera Convolutional Neural Networks, Coursera Supervised Machine Learning, Rinex VLSI course.

Leadership Roles

- IITJ Board of Co-curricular Activities, UG Representative
- Coordinator, Robotics Society, IITJ
- Member, Career Development Cell (CDC), IITJ
- Led a team of 8 members at Inter-IIT Tech Meet 13.0 at IIT Bombay for IdeaForge and achieved 7th PS Rank as well as institute best 10th Overall Rank.