Ritupan Deka

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Professional Summary

Result-driven Software Developer and Frontend Engineer with hands-on experience in full-stack web development, machine learning systems, and secure application design. Known for increasing process efficiency, improving UX performance, and automating workflows across real-world projects and research internships. Skilled in React, Tailwind CSS, Node.js, Python, and TensorFlow. Demonstrated ability to deliver quantifiable improvements and high-availability products in fast-paced environments.

Skills

Languages: JavaScript, Python, C/C++, Java, Kotlin, SQL
Frontend: React.js, HTML5, CSS3, Tailwind CSS, Vue.js, Accessibility
Backend: Node.js, Express.js, REST APIs, WebSockets
Databases: MongoDB, Firebase, MySQL
Tools: Git, GitHub, Postman, VS Code
Cloud/Platform: AWS, GCP, Linux
ML/AI: TensorFlow, PyTorch, OpenCV, Keras, NumPy, Scikit-learn
Methodologies: Agile, Version Control, Debugging, Unit Testing

Work Experience

Software Developer Intern Jul 2023 – Aug 2023
Indian Oil Corporation Ltd (IOCL), Bongaigoan, Assam
−Delivered a responsive speech-to-text mobile application and website used by 100+ internal users.
−Automated transcription saved 50 hours/month previously spent on manual note-taking.
−Integrated Google Speech API and ensured privacy by enforcing local data retention.
−Improved user accessibility and load performance by optimizing UI components with Tailwind CSS.
Tech Used: JavaScript, Python, HTML/CSS, Google Speech API, Tailwind CSS

Software Research Intern Jul 2024 – Aug 2024
National Institute of Technology (NIT) Silchar, Assam
−Built a cryptographic encoder using cyclic shift + XOR, tested with 10,000+ data points.
−Reduced dataset creation time by 90% through C-based automation tools.
−Improved encryption randomness and uniqueness by 15% via Hamming distance metrics.
Tech Used: C, Cryptographic Algorithms, File I/O, Statistical Evaluation

Education

B.Tech in Computer Science and Engineering Nov 2021 – Jun 2025
Barak Valley Engineering College, Assam CGPA: 7.16/10
Core Courses: Data Structures and Algorithms, Object Oriented Programming, Operating Systems, DBMS, Cryptography and Network Security,, ComputerNetwork, Neural Networks, ML/AI,

Projects

Handwritten Text Recognition Model Jun 2023 – Dec 2023
−Designed a hybrid CNN+RNN model for recognizing handwritten text with 92% accuracy.
−Integrated OpenCV pipeline for preprocessing and segmentation.
−Scaled to 1,000+ image inputs and exported results to text files for integration.
Tech Used: Python, TensorFlow, OpenCV, NumPy

Secure Medical Image Watermarking Jan 2024 – Jun 2025
−Embedded patient metadata inside medical images without degrading visual fidelity (SSIM > 0.95).
−Built watermark encoder supporting multiple formats and transformation robustness.
− Successfully validated output on 500+ clinical-quality sample images.
Tech Used: Python, NumPy

Volunteer Activities

- **NCC Cadet:** Completed leadership and survival training through national programs.
- **Outreach Organizer:** Led 6 social campaigns across Assam for digital literacy and health awareness.