Swetna Annette Tribhuvan

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Full Stack Software Engineer with 2 years of experience in Python, Java, cloud computing, API development, testing, and database optimization. Skilled in building scalable solutions and boosting system performance to enhance efficiency.

Technical Capabilities

- **Languages:** Python, Java, JavaScript, Kotlin, C#, SQL, PHP, HTML, CSS
- **Frontend:** React.js, Vue.js, API Integration
- **Backend:** Spring Boot, Django, Flask, Laravel, Distributed Architecture
- **Machine Learning:** TensorFlow, Scikit-learn, OpenCV, Predictive Modeling
- **Data Management:** PostgreSQL, MongoDB, MySQL, ETL Processes
- **Cloud Infrastructure:** AWS, Docker, Kubernetes, Deployment Automation

Professional Experience

Backend Software Developer — Feb 2025 – Present
PolicyEngine, Rochester, NY

- Transformed Python RESTful API, eliminating 95% of pre-release vulnerabilities through advanced security modeling
- Restructured database query mechanisms, slashing execution time by 50% via targeted indexing strategies
- Expanded automated test frameworks, elevating software reliability by 15% through precise error detection protocols
- Architected modular microservices, dramatically enhancing system fault tolerance and scalability by 40%
- Diagnosed critical backend anomalies, reducing incident response intervals by 30% through advanced monitoring techniques

Software Engineer Intern — May 2023 – Dec 2024
Information and Technology Services - RIT, Rochester, NY

- Developed machine learning models for energy forecasting, reducing processing complexity by 40% through advanced algorithms
- Created a real-time monitoring dashboard that enhanced operational efficiency by 78% by effective interactive data visualization.
- Deployed full-stack applications, ensuring 99.9% system stability through careful infrastructure planning
- Refactored front-end architecture, eliminating performance bottlenecks and reducing page load times by 75%
- Consolidated workflows of 4 teams, reducing project coordination delays by 45% and speeding up sprint delivery timelines

Web Developer Intern — May 2021 – Jul 2021
Covid India National Taskforce, Mumbai, India

- Reconstructed web platform's information flow, increasing data visibility and user comprehension by 22% through targeted interface redesign
- Refined database interaction patterns using MySQL and PHP, resulting in a 11% faster information retrieval rate and enhanced overall system efficiency.
- Expanded API integration across multiple platforms, enabling real-time data synchronization by 35%
- Facilitated communication across three regional teams, leading to the successful completion and early delivery of key web development projects.

Projects

AI-Driven Traffic Flow Optimization — GitHub: Swetna/TrafficFlowAI

- Proposed adaptive traffic management system using SUMO and Google Maps API, reducing urban congestion by 15%
- Implemented machine learning signal control algorithms responding to 50,000+ dynamically to real-time traffic conditions
- Containerized deployment and AWS cloud infrastructure, ensuring consistent application performance across environments

Tech Ecosystem: Python, TensorFlow, SUMO, Google Maps API, Docker, Jenkins, AWS

Poison Ivy Detection Mechanism — GitHub: Swetna/PoisonIvyDetection

- Constructed computer vision model achieving 91% diagnostic precision through advanced feature extraction
- Processed and curated 5,000+ image datasets, reducing model training noise by 25% and improving machine learning model accuracy

Tech Ecosystem: Python, OpenCV, Scikit-learn, TensorFlow, NumPy, Pandas

Full-Stack Hotel Reservation Platform — GitHub: Swetna/HotelBookingApp

- Fortified authentication ecosystem, mitigating unauthorized access by 95% through multi-layer security protocols
- Transformed user interface for mobile responsiveness, increasing digital engagement by 40%
- Established cloud-native infrastructure enabling continuous system availability upto 60%

Tech Ecosystem: MongoDB, Express.js, React.js, Node.js, JWT, AWS

Academic Background

Master of Science in Computer Science — Aug 2021 – Dec 2024
Rochester Institute of Technology, Rochester, NY

Concentrated Studies: Computational Problem Solving, Advanced Object-Oriented Programming, AI, Machine Learning, Big Data Analytics, Algorithmic Design, Database Architecture, Computer Vision, Cryptographic Systems

Bachelor of Science in Information Technology — Jun 2017 – Jun 2021
University of Mumbai, Mumbai, India

Professional Certification

AWS Certified Developer Associate (Dec 2024), AWS Certified Cloud Practitioner (Apr 2024)