Swetna Annette Tribhuvan

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Organized and self-motivated software engineer graduate with **2+ years** professional experience. Fluent in Python, JavaScript, Java programming languages. Possess practical working knowledge of relational databases using PostgreSQL, SQL Server, Cloud Development, and Agile Development. Reliable and responsible team player.

Technical Skills

- **Languages:** Python, Java, JavaScript, TypeScript, Kotlin, C#, SQL, PHP, HTML, CSS, R
- **Full Stack:** Pytest, Laravel, Node.js, React, Vue, API Integration, Spring Boot, Django, Flask, Distributed Architecture, JUnit
- **Machine Learning:** TensorFlow, Scikit-learn, OpenCV, Predictive Modeling, Geospatial Modeling
- **Data Management:** PostgreSQL, MongoDB, MySQL, ETL Processes, Spatial Data Analysis, QGIS
- **Cloud Infrastructure:** AWS, Google Cloud Platform, Docker, Kubernetes, Git Actions, Deployment Automation

Professional Experience

PolicyEngine — Washington, D.C
Backend Software Engineer — Feb 2025 – Present

- Developed **25+ Pytest** test cases, boosting **code coverage** by 18% and cutting **production bugs** by 12%
- Resolved **GCP deployment** issues in 3 environments, reducing **deployment time** by **22%** through improved **configurations** and **error handling**
- Optimized **GitHub Actions** workflows, cutting **CI/CD** runtime by **25%** and improving **build reliability**
- Assisted teammates by **troubleshooting** 3–5 issues per sprint, keeping **development** on track

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

- Crafted a real-time monitoring dashboard with **PostgreSQL** and **Grafana**, improving operational efficiency by **25%**
- Engineered robust backend **APIs** & services using **Java**, **C#**, enhancing system integration and reducing processing time by **15%**
- Secured **95% system uptime** through **Kubernetes** infrastructure implementation and strategic redundancy planning
- Optimized front-end architecture using **JavaScript** and **Vue.js**, decreasing page load times by **40%**
- Created content management solutions with **Laravel** and **Drupal**, supporting enterprise-wide web initiatives
- Led **Agile** and **Scrum** methodologies using **Jira** and **Trello**, increasing team velocity by **20%** and reducing delivery time

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

- Revamped web platform's **information architecture**, enhancing user comprehension by **22%**
- Optimized data retrieval by **11%** through refined **MySQL** and **PHP** database interactions
- Facilitated **35%** faster real-time data synchronization through expanded **API integration**
- Spearheaded collaboration with three regional teams to deliver key **web development** projects ahead of schedule

Projects

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

- Pioneered Developed adaptive traffic system with SUMO and Google Maps API, cutting congestion by 15%
- Built **ML-based signal control** for 50,000+ **real-time** traffic scenarios
- Orchestrated application using **Docker** and **AWS** cloud infrastructure
- *Technologies: **Python, TensorFlow, SUMO, Google Maps API, Docker, Jenkins, AWS***

Groundwater Prediction and Quality Analysis — GitHub: Swetna/MahabhujalApp

- Built **React** and **TypeScript** dashboard visualizing water quality from 30+ stations
- Analyzed groundwater trends in **QGIS** with 3-layer contamination risk maps
- Modeled seasonal water table shifts with R and automated Node.js services via Git Actions, **cutting deployment time** 35%
- *Technologies: **JavaScript, TypeScript, React, Node.js, QGIS, R, Git Actions***

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

- Reinforced **authentication**, eliminating 72% of unauthorized access via multi-layer security
- Redesigned **mobile-responsive UI**, increasing engagement by 40%
- Deployed **cloud-native infrastructure**, maintaining over 90% system availability
- *Technologies: **MongoDB, Express.js, React.js, Node.js, JWT, AWS***

Education

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

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

Certifications

- **AWS Certified Developer Associate** - Amazon Web Services — Dec 2024
- **AWS Certified Cloud Practitioner** - Amazon Web Services — Apr 2024
- **Introduction to Generative AI** - Google Cloud — Jul 2023