

Swetha Rajeev

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PROFESSIONAL SUMMARY

Software Engineer specializing in web development, mobile applications, and data engineering with statistical analysis expertise. Builds scalable applications using Vue.js and Kotlin, while designing robust data pipelines with Python and PostgreSQL to transform complex datasets into business insights.

EDUCATION

Master of Science, Computer Science

Jan 2023 – Dec 2024

Virginia Tech

Blacksburg, VA

– CGPA: 4.0

Bachelor of Technology, Electronics and Communication

Sep 2012 – May 2016

Cochin University of Science and Technology

India

EXPERIENCE

Graduate Research Assistant

Jan 2023 – Dec 2024

Virginia Tech

Blacksburg, VA

- Developed a data pipeline using Python (spaCy, scikit-learn), achieving 92% accuracy in research paper retrieval by converting unstructured queries into structured search parameters.
- Conducted a survey of 134 software engineers to analyze learning patterns and challenges in full-stack development tool adoption, applying statistical analysis to extract actionable insights to improve development workflows and tool adoption.
- Built a Vue.js-based Book Store application with RESTful APIs and Pinia state management, implementing responsive design patterns and optimizing client-server interactions for enhanced user experience
- Developed the BucketList mobile app in Kotlin, implementing MVVM architecture, RecyclerView for dynamic UI rendering, and Room Database for local data persistence, enabling seamless goal tracking and user interactions.

Software Engineer

Dec 2018 – Mar 2021

Centre for Development of Advanced Computing

Trivandrum, India

- Designed and implemented a PostgreSQL-based Electronic Medical Record(EMR) system, optimizing indexing and query execution to reduce data retrieval latency by 25% and lower operational costs by 17%.
- Engineered interactive telehealth dashboards using D3.js and PostgreSQL in collaboration with cross-functional teams, implementing real-time data visualization that streamlined clinical decision-making and enhanced remote consultation workflows
- Designed and implemented real-time vehicle telemetry analytics pipelines using Redis and PostgreSQL, enabling high-throughput event-driven processing for automated anomaly detection.
- Developed a full-stack vehicle management system with Java (Spring Boot), Node.js, Vue.js, and Redis, integrating microservices, asynchronous communication, and caching strategies, improving scalability and data consistency.
- Designed an automated tool for issuing driving licenses using Zigbee communication and LabView, resulting in patent grant (*Intellectual Property India, Patent No: 441059, Date: 01/15/2018*).

Data Analyst

Aug 2016 – Dec 2018

IDP Education

Chennai, India

- Analyzed program success metrics and student enrollment data for international university admissions, creating actionable insights that improved acceptance rates by 17% through optimized application strategies
- Designed and automated analytics dashboards using Tableau, and SQL, improving data validation, pipeline efficiency, and partner engagement across 18+ universities.

RESEARCH PAPERS

ResearchBot: Bridging Academic Research and Practical Programming - Developed an AI-powered tool to summarize and integrate scholarly research, making academic insights more accessible to software engineer in Stack Overflow.

Impact of Social Media Algorithms on Mental Health and Polarization - Analyzed how algorithm-driven content curation influences user behavior, contributing to echo chambers and mental health challenges.

Bridging Gaps in Software Engineering Education: Learning Behaviors and Resource Effectiveness - Investigated learning patterns and challenges among software engineers, evaluating the effectiveness of educational resources and tool adoption.

TECHNICAL SKILLS

Web Development: JavaScript (Vue.js, React, Node.js), HTML/CSS, RESTful APIs

Mobile Development: Kotlin, Android Architecture (MVVM), Room Database

Data Engineering: Python (Pandas, NumPy), SQL (PostgreSQL, MySQL, Redis), ETL Development

Statistical Analysis: Data Modeling, A/B Testing, Hypothesis Testing

Tools & Platforms: Git, Docker, Jupyter Notebooks, Tableau

Certifications: Red Hat Certified System Administrator (Dec 2016)