Ritvik Pandillapally

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Summary

Software Engineer with experience building scalable backend systems using Java, Python, and SQL. Strong in designing testable code, debugging production issues, and developing high-quality web applications. Experienced in microservices, APIs, and database optimization.

Education

Rochester Institute of Technology **Rochester, NY**
Master of Science in Data Science, Cumulative GPA: 3.75 *Aug 2024 – Expected Dec 2026*

Rochester Institute of Technology **Rochester, NY**
Bachelor of Science in Computing and Information Technologies, Cumulative GPA: 3.50, Cum Laude, Dean's List *Dec 2023*

- **Relevant Coursework**: Data Structures and Algorithms, Data Visualization, Principles of Data Management, Database Connectivity and Access, Client Programming, Server Programming, Database Application Development, Design Patterns and Principles, System Administration

Vellore Institute of Technology **Vellore, India**
Undergraduate coursework (transferred to RIT), CGPA: 9.04/10 *Jul 2019 – Jul 2021*

Technical Skills

Languages: Python, Java, JavaScript, TypeScript, SQL, PHP, Bash, R
Web Frameworks: Angular, React, AngularJS, Node.js, Express, Spring Boot, Django, jQuery, Bootstrap, Material-UI, HTML, CSS, Web Components, Webpack Module Federation
APIs: REST, GraphQL, Postman, Swagger
Databases: MySQL, MongoDB, Neo4j, SQLite
Machine Learning and Data: PyTorch, scikit-learn, TensorFlow, Keras, XGBoost, Pandas, NumPy, Seaborn, Plotly, Matplotlib, Vertex AI, AutoML
AI: LLMs, Model Context Protocol (MCP), Claude, GitHub Copilot
Cloud and DevOps: AWS, Microsoft Azure, Microsoft Entra ID (OAuth 2.0), Google Cloud Platform, Azure DevOps, Jenkins, ArgoCD, Docker, Kubernetes, Ansible, Terraform, Git, Jira, Maven
AWS Services: IAM, EC2, S3, VPC, RDS, Aurora, DynamoDB, Lambda, SNS, SQS, CloudWatch, EKS, ECR, CloudFormation, CodeBuild, CodeDeploy, CodePipeline
Other Tools: Hibernate, Spring Data JPA, Akeneo PIM, Shopify, Rally, DigitalOcean

Work Experience

Ecolab **St Paul, MN (Remote)**
Software Engineer *May 2025 – Present*

- Architected and built an **Angular 22** enterprise **Native Shell** from scratch, leveraging **Module Federation** to integrate 100+ independently developed **micro-frontends** within a unified application.
- Architected a **web component library** using **native JavaScript** and **Shadow DOM** for the Neptune Design System, enabling framework-agnostic reusability and reducing component duplication by 40%.
- Engineered and maintained **Retail Intelligence** features using **Angular 20** and **TypeScript**, developing modular, reusable frontend components for enterprise-scale applications.
- Implemented **lazy loading** and shared authentication using **Microsoft Entra ID (OAuth 2.0)**, supporting secure application access and efficient micro-frontend integration.
- Automated build and deployment workflows through **Azure DevOps CI/CD** pipelines and conducted **A/B testing** to evaluate frontend changes and improve user experience.
- Pioneered **Model Context Protocol (MCP)** integration connecting **Figma** designs with **LLMs (Claude, GitHub Copilot)** to automate design-to-code workflows, reducing prototype turnaround from days to hours.

Rochester Institute of Technology **Rochester, NY**
Teaching Assistant *Aug 2024 – May 2025*

- Mentored students in **ISTE 341 Server Programming**, covering **PHP**, **Node.js** and **Java**, and guided them on assignments and projects to follow **back-end development** best practices.
- Graded assignments and exams with constructive feedback and held tutoring hours to address student questions and reinforce course material.

Rochester Institute of Technology **Rochester, NY**
Tutor *Jan 2025 – May 2025*

- Delivered one-on-one tutoring in **Python** and **Java** programming concepts.

StrikeTru **Houston, TX**
Software Developer Intern *Sep 2022 – Jan 2023 | Jan 2024 – Aug 2024*

- Developed synchronization services and delivered **RESTful/GraphQL APIs** using **Spring Boot** in a **microservices architecture**, enabling real-time product sync from **Akeneo** to **Shopify** and reducing manual discrepancies by 90% while keeping system downtime under 1%.
- Optimized the internal **StruCentralDB** application to manage customer data, configurations and multi-tenant synchronization jobs; designed **database schemas**, indexing strategies and validation rules for scalability and security.
- Implemented **unit, integration and E2E testing** with **CI/CD automation** using **Jenkins** and **ArgoCD on Kubernetes**, cutting deployment time by ∼60% and reducing defects by 20%.
- Built a 3-tier back end in **Java** with **Spring Boot**, **Spring Data JPA**, **Hibernate** and **MySQL** (REST, business and data layers) and deployed it on **AWS**.
- Automated product data entry from CSV files into **Akeneo PIM** with a **Java** program, reducing manual effort by 80%.
- Built interactive web pages with **HTML, CSS, Bootstrap, JavaScript, jQuery** and **PHP**, increasing conversion rates by 15%.

Ford Motor Company **Detroit, MI**
Software Engineer Intern *Jun 2022 – Sep 2022*

- Performed **exploratory data analysis** on 1M+ user patterns in FEDEBOM and built ML models using **neural networks**, **random forest** and **AutoML/Vertex AI** on **Google Cloud Platform**, achieving 90%+ accuracy.
- Applied **neural-network classification** to speed up user-profile classification by 5x.
- Integrated **Aegis** and **FOSSA** to detect vulnerabilities in third-party JAR files and provided fixes, reducing security risks by 30%.
- Collaborated with cross-functional teams in an **agile environment** to streamline the SDLC, improving productivity by 20%.

Niltech - Nugatory Inherits Luminescence Technologies **Hyderabad, India**
Software Developer Intern *Mar 2021 – Jul 2021*

- Launched a real-time weather forecasting web application with **AngularJS** and **Django**, integrating the **OpenWeatherMap API** to deliver predictions for 10,000+ cities.
- Established a **data ingestion pipeline** to clean and cache high-frequency weather data and applied predictive **ML models** (time-series regression, ensemble methods) to improve short-term forecast accuracy.
- Collaborated with three engineers to build a **Raspberry Pi 3** healthcare monitoring system in **Python**, integrating gas, ECG, pulse and temperature sensors with cloud storage for remote patient monitoring.
- Trained **regression**, **decision tree** and **random forest** models with accuracy above 85% without overfitting.
- Programmed **Python** projects spanning speech recognition, web APIs, Raspberry Pi, cryptography and steganography.

LogicProg Technologies **Hyderabad, India**
Web Developer Intern *Apr 2017 – Jul 2017*

- Developed web applications with **HTML, CSS, Bootstrap, JavaScript** and **PHP**.

Projects

Prediction of Readmission of Hospital Patients with Diabetes | *RIT*

- Built a pipeline to clean and preprocess 10 years of **EHR data** (100K+ patients, 50+ features) from 130 US hospitals.
- Tuned **Logistic Regression**, **Random Forest** and **XGBoost** models with **hyperparameter optimization** to predict readmission, achieving 72% F1, 81% precision and 67% recall.

Candy Store ETL Pipeline | *RIT*

- Devised a **batch ETL pipeline** to automate order validation, inventory checks, and transform raw **JSON transactions** into structured **MySQL/MongoDB** tables; orchestrated workflows with **Apache Airflow** and scalable **PySpark** jobs.
- Generated actionable **analytics outputs** (daily summaries, inventory updates, and sales forecasts evaluated with MAE and MSE) by leveraging **Prophet** to model trends and guide data-driven business decisions.

Banking System with Lambda Architecture | *RIT*

- Constructed a scalable credit card transaction processing system using **Lambda Architecture**, combining **Kafka-based streaming**, **batch aggregation**, and a **MySQL serving layer** to handle real-time and historical data.
- Implemented validation pipelines to approve/decline transactions, flag fraud, and update customer profiles and credit limits; batch workflows finalized balances and recalculated credit scores for efficient querying and end-to-end reliability.

Slide Show Manager Application | *RIT capstone with St. Peter's Kitchen (nonprofit partner)*

- Led requirements, architecture and delivery of a **slideshow manager** for a nonprofit partner in a 5-member capstone team.
- Built the full stack with **React/Material-UI**, **Node.js/Express** and **MySQL**, integrated with a **Raspberry Pi** display managing 200+ images; deployed on **DigitalOcean** and wrote admin and end-user documentation.

Automated CI/CD for EKS Cluster on AWS | *Personal Project*

- Built a **Jenkins CI/CD pipeline** for **AWS EKS** with **ECR** image management, eliminating manual deployment steps and improving reliability by 30%.
- Created a scalable **EKS** cluster integrated with **Docker**, **AWS CLI** and **Git** for application testing and validation.

Election Services Management System | *RIT*

- Led a team of 3 to build a web-based **election services system** for professional societies, with a **JavaScript** ballot builder that raised engagement by 20%.
- Developed a **Spring Boot** and **MySQL** back end for online and paper ballots, improving data processing time by 30%, and built reporting that cut result analysis time by 25%.

Search Application for Cafes in India | *RIT*

- Led a team of 4 to build a cafe search application with an **HTML/CSS/JavaScript** front end and **Node.js/Express** REST APIs.
- Hosted the database on **MongoDB Atlas** with **GridFS** storing ∼200 images.

Hometown Touring Website | *RIT*

- Built a tourism website for Hyderabad with an **HTML/CSS/JavaScript** front end and **PHP** back end, increasing engagement by 25% and cutting load times by 30%.

Earlier Projects (2019–2021)

- University Website; Python socket chat application; cryptography and steganography encryption tool; JavaFX Tic-Tac-Toe; Bluetooth-controlled Arduino car.

Leadership and Activities

- Volunteered with **OASIS (Indian cultural club)** at **RIT**, organizing community events, cultural showcases, and student networking initiatives that strengthened cross-cultural engagement on campus.
- Contributed as a core volunteer in an **Android Development Club** (VIT-AP), mentoring peers in mobile app fundamentals and supporting workshops that fostered hands-on learning and collaboration.