

Rahil Piyush Mehta

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Education

Oregon State University, *Master of Science*

Sept 2023 – March 2026

Mumbai University, *Bachelor of Engineering*

May 2018 – May 2022

Experience

Graduate Research Assistant, *Oregon State University*

May 2025 – Present

- Led development of **Defects4REST** (ICSE'26), enabling reproducible deployment/testing of real-world REST API defects; containerized **16 services** (buggy + patched) with Docker.
- Ran **600+ hours** of large-scale REST testing campaigns on an HPC cluster using Bash/Python with Schemathesis, RESTler, EvoMaster, and AutoRestTest, executing **millions of requests**.
- Triaged failures and quantified results by mining logs/HAR/test reports to compare tool effectiveness.

Graduate Teaching Assistant, *Oregon State University*

Sept 2024 – Present

- Grade assignments with strict adherence to the rubric, maintaining fairness and consistency for all students.
- Mentor students on **CI/CD workflows, code reviews, and debugging** during weekly office hours, helping them deliver more reliable projects.

Software Engineer, *Nerve Solutions (Startup)*

Feb 2023 – Aug 2023

- Designed and implemented a high-throughput **.NET alert engine** processing **250K+ alerts/second**, incorporating user preferences, alert priority, and system load.
- Cut infrastructure costs by **33%** by replacing the legacy alert routing logic with a more CPU- and memory-efficient algorithm.
- Improved system scalability and reliability by adding load balancing, structured logging, and automatic failover.
- Built a continuous backup pipeline and a real-time monitoring tool with Slack and email alerts, reducing mean time to resolution (MTTR) by **50%**.

Programmer, *Acty System India (Subsidiary of Acty System Japan)*

May 2022 – Nov 2022

- Built a console application to filter large text files using dynamically generated commands parsed from XML configurations.
- Developed a Windows application for **real-time, flicker-free 2D graphing** with customizable features (slopes, ranges, grid, tooltips) using double buffering and no external libraries.
- Implemented core modules (login, password reset, CRUD operations) for an internal **Employee Management System**, improving accessibility and data management for HR and admin staff.

Projects

Assistive Vision – Capstone Project

- Developed a mobile app for visually impaired users with Image Captioning, Cloth Detection (**90% accuracy**) and an Indian Currency Calculator (**85% accuracy**).
- Optimized models with EfficientNetLite and EfficientDet on a custom dataset, for offline use with a compact 110 MB app size.

RAGucation – Retrieval-Augmented Generation Tool (2025)

- Built a RAG pipeline to answer natural language questions over PDFs and CSVs using ChromaDB and Sentence Transformers.
- Deployed an interactive Streamlit app with file upload, chunking, and top-k retrieval, powered by a local Ollama LLM for private, efficient inference.

Publications

- Rahil Piyush Mehta** et al., “Defects4REST: A Benchmark of Real-World Defects to Enable Controlled Testing and Debugging Studies for REST APIs.” *ICSE 2026 (Research Track)*. **First Author. Role:** Led benchmark design/implementation, built deployment + replication tooling, and ran empirical evaluation.
- Rahil Piyush Mehta** et al., “Uncovering Systemic and Environment Errors in Autonomous Systems Using Differential Testing.” *AAAI Fall Symposium 2025 (ATRACC)*. **Co-First Author. Role:** Built env/task generation, feasibility detection, and experimental analysis.

Skills

Languages: Python, C#, SQL

Frameworks & Libraries: .NET, TensorFlow/TFLite, Streamlit, Entity Framework, Windows Forms

AI & Data: RAG, EfficientNetLite, EfficientDet, Sentence Transformers, Ollama

DevOps & Tools: Linux, Bash, Docker, Docker Compose, Podman, Git, GitHub Actions

APIs & Testing: REST APIs, instagrapi, Pexels API, OpenAPI/Swagger, PyTest, xUnit, Schemathesis, RESTler, EvoMaster, AutoRestTest

Databases: MSSQL, MongoDB, ChromaDB