

Rahul Vikram

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EDUCATION

Oregon State University

Corvallis, OR

Honors Bachelor of Science in Computer Science | Minors: Mathematics, Business | GPA: 4.00

Expected June 2027

- Coursework: Data Structures, Algorithm Analysis, Object-Oriented Programming, Web Development, Software Engineering I/II, Database Management, Machine Learning, Networks, Operating Systems, Discrete Math

EXPERIENCE

Software Developer

January 2025 — Present

Center for Applied Systems and Software

Corvallis, OR

- Developed a full-stack Scholarship Management System for OSU Foundation using **React**, **TypeScript**, and **.NET 8**, building a **microservices architecture** that streamlined scholarship criteria, awards, and funding administration.
- Built **secure, scalable APIs** with **ASP.NET**, **C#**, **Entity Framework**, and **Azure SQL**, integrating Microsoft Entra ID (Azure RBAC/MSAL), JWT authorization, and Azure Key Vault for authentication management.
- Implemented **Cypress component/API tests** with 98% coverage and architected an **Azure DevOps CI/CD pipeline**, automating build, test, and deployment workflows, improving stage/production release reliability.
- Led **Swift 6 migration** of an iOS seed analysis app, upgrading deprecated **Network Protocol APIs** and moving from PromiseKit to native async/await concurrency, enhancing maintainability and future compatibility.

Software Engineer Intern

June 2025 — August 2025

Oregon Department of Transportation

Remote

- Spearheaded migration from a legacy .NET MVC variable speed reporter app to a **modern .NET 8 ASP.NET Core** solution, adopting domain models, **dependency injection**, and config patterns to improve maintainability.
- Integrated ODOT Message Query API via **Refit REST client**, implementing the **repository pattern** to eliminate HTTP boilerplate, and built a **GitHub Actions CI/CD** pipeline to automate testing and deployment.
- Created **C# LINQ extension methods** for sign models, refactored **Razor views**, and implemented a recursive parent-child ordering algorithm for corridors/segments/signs, improving deterministic data rendering.

Applied AI Research Intern

October 2024 — May 2025

STAR Lab

Corvallis, OR

- Co-authored a [NeurIPS 2025](#) paper on **NLP research** using LLMs to automatically generate **Natural Semantic Metalanguage (NSM)** explications, advancing cross-linguistic semantic representation.
- Engineered and **fine-tuned LLMs** in **PyTorch** on a specialized dataset to generate accurate, universally translatable semantic representations, **outperforming GPT-4o benchmarks**.
- Developed automatic **evaluation metrics** and **Python scripts** with NLTK to validate 1M words of semantic outputs against NSM filters, ensuring accuracy and reproducibility.

PROJECTS

LeafLens.ai | *Next.js, React, AWS, Flask, Express.js, Vercel AI SDK, Tailwind, Radix UI, Clerk*

[GitHub](#)

- Developed a **full-stack AI-powered** plant disease detection platform using Next.js, React, and Tailwind, integrating REST APIs to deliver **LLM-generated PDF reports** with disease identification and treatment recommendations.
- Architected a **scalable microservices system** with Next.js frontend hosted on AWS **Amplify**, Flask and Express APIs on AWS **Lambda**, and NoSQL database on AWS **DynamoDB**, delivering a **cloud-native application**.

RunMetrics Visualization GUI | *Python, pandas, Matplotlib, Tkinter, Poetry*

[PyPi](#) | [GitHub](#)

- Created pip installable **Python package** with Poetry for large-scale process analysis and **data visualization**.
- Architected an **ETL pipeline** using pandas to extract, clean, and load large CSV datasets and developed an **object-oriented plotting interface** with Matplotlib and a Tkinter GUI for interactive graph customization.

TECHNICAL SKILLS

Languages: Python, JavaScript/TypeScript, C, C#, C++, Java, SQL, HTML, CSS, Swift, R

Technologies: React, Next.js, Vue, Express, Vite, Redux Toolkit, Cypress, Tailwind, MagicUI, Vercel AI SDK, REST, ASP.NET, MySQL, PostgreSQL, AWS, Firebase, Flask, NumPy, pandas, Matplotlib, Scikit-Learn, Tensorflow, PyTorch

Developer Tools: Git, GitHub, Azure DevOps, Docker, Visual Studio, VSCode, Jupyter Notebook, Google Colab