

# Rohan Sonawane

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**Github:** <https://github.com/rohansonawane>, **Portfolio:** <https://rohansonawane.tech>

## SKILLS

**Software and Web Development:** PHP, Python, JavaScript, TypeScript, C++, C#, Go, React, Node.js, Django, Flask, REST APIs, GraphQL, RUST, HTML5, CSS3, Tailwind, UI/UX, WordPress, Database Management, Web Services, frontend, User Interaction, User Experience, SQL, NoSQL, Azure, Apache Spark, Flutter, Angular, Vue, Cassandra, Dart, Slack, e-commerce

**AI/ML and Data Science:** TensorFlow, PyTorch, Scikit-learn, Machine Learning, Deep Learning, NLP, LLMs, CNNs, RNNs, GANs, Terraform, Data models, data pipeline, non-relational databases, statistics, data visualization

**Cloud Technologies, DevOps and Tools:** AWS, Google Cloud Platform, Digital Ocean, Docker, CI/CD, Docker, Kubernetes, Jenkins, Git, JIRA, MySQL, MongoDB, Unity, A-frame.js, AR, VR, Scrum, Agile, Oracle Software, Design Patterns, Redis, Postgres, DynamoDB, CloudFormation, Kafka, microservices, Unix, Linux, vim, DNS, Elasticsearch, Shell Scripting

## PROFESSIONAL EXPERIENCE

### California State University Dominguez Hills

Los Angeles, CA, USA

Software Engineer and AI and VR Researcher

Oct 2023 – May 2025

- Designed and developed an AI-powered virtual teacher in Unity using C#, OpenAI API, Convai, and XR Toolkit for VR education, **integrating REST APIs and system integration techniques** to enhance cross-platform compatibility increasing student engagement by 40% and receiving positive faculty feedback.
- Built LLM-powered NPC teachers with context-aware dialogue, improving knowledge retention by 50% through natural, human-like interaction.
- Designed and created high-fidelity 3D assets using Blender, integrated into Unity to visually demonstrate complex Physics and Biology concepts for enhanced student engagement and learning.
- Mentored 6 students in 3D sketching, Blender, Unity, and VR development, guiding them to successfully build projects including a pendulum simulation, a Tesla 3D model, and a VR cannon shooting game that earned a special prize.
- Developed and deployed the Biophysics Department website user interface using the institution's internal CMS platform, enhancing information architecture and improving accessibility to research outputs, academic publications, and faculty resources.

### Self-Employed

Mumbai, IN

Full Stack Software Development Engineer

Oct 2020 – Jul 2023

- Built and deployed 15+ full-stack web applications using React.js, Node.js, PHP, and SQL, improving UI responsiveness and user satisfaction by 40%.
- Developed and deployed a high-performance, SEO-optimized landing page for Suburban Diagnostics using a custom WordPress theme, MySQL, and backend form validation, built in 48 hours with 14 to 16 hours workdays resulting in a 300% increase in qualified leads, top Google ranking during COVID-19, and zero spam entries using web security practices, while ensuring full compliance with government health regulations.
- Implemented CI/CD pipelines using GitHub Actions and Docker, refactored legacy systems to optimize performance, reducing load times by 50% and accelerating deployments.
- Developed custom WordPress templates, modules, and plugins including a petition system and a donation platform with recurring payments and Google Sheets integration enhancing functionality and automation.
- Oversaw the full SDLC for 7 client projects, from requirement analysis to delivery, cutting delivery times by 50% through workflow optimization.
- Consulted with clients to deliver tailored solutions, resulting in a 95% satisfaction rate and repeat business from 5 clients.

### Briefkase Digital Communications Private Limited

Mumbai, IN

Full Stack Software Development Engineer

Jun 2016 – Sep 2020

- Delivered 60+ scalable web applications as part of a 5-member team, accelerating project delivery by 60% and improving product reliability by 70%.
- Drove the creation and implementation of Agile SDLC workflows integrating Git version control, sprint planning, and TDD/BDD lead to resulting in a 60% faster development cycle and 50% higher release stability in a fast-paced startup setting.
- Revamped websites for performance, SEO, and security by optimizing load speeds and implementing best practices, achieving 70% faster page loads, improved Google rankings, increased organic traffic, and generating more qualified leads with 80% enhanced site security.
- Design and developed custom WordPress, Magento, and Shopify themes and plugins for improved UI/UX, Performance and Security.
- Collaborated cross-functionally with marketing and UI/UX design teams to architect and implement optimized web application interfaces, leveraging Agile methodologies to accelerate project delivery timelines by 50%.

## PROJECTS

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### Portfolio Website | *Next.js, React.js, Vercel, Cloudflare*

[Link to Project](#)

- Designed and deployed a high-performance, mobile-first portfolio using Next.js 14, React 18, and Tailwind CSS, achieving 94+ Lighthouse scores across Performance, Accessibility, Best Practices, and SEO, while delivering a polished UI and intuitive UX optimized for all screen sizes.
- Enhanced user engagement by implementing smooth animations (Framer Motion), responsive layouts, and optimized interactions, resulting in less than 2.5s LCP and less than 100ms FID - creating a visually rich, accessible, and frictionless browsing experience across devices.

### Interactive Hate Map | *Mapbox API, PHP, MySQL, JavaScript*

[Link to Project](#)

- Designed and developed a full-stack geospatial tool using Mapbox GL JS, JavaScript, PHP, and MySQL to visualize hate crime data with real-time clustering, filtering, and drill-down features improving accessibility and insight for advocacy and research.
- Optimized backend with indexed MySQL queries and efficient PHP APIs, reducing spatial query latency by 65% and enabling fast, responsive map rendering across 500+ dynamic data points.

### Early Detection of Cancer and Subtype Classification | *Python, Deep Learning, Multi-Omics, XAI*

[Link to Project](#)

- Built a deep neural network for predictive analysis to classify 6 cancer subtypes using integrated mRNA, miRNA, and SNV data, achieving 88.5% AUC and 78.2% accuracy, with KEGG pathway-based feature engineering to boost biological relevance, and built a **data pipeline for multi-omics data processing**.
- Enhanced model interpretability with SHAP and Grad-CAM explainable AI techniques, creating a transparent, end-to-end bioinformatics pipeline that supports reproducibility and insights for early cancer detection research.

### AI-Powered Legal Document Analysis Assistant (Personal Project) | *RAG, PostgreSQL, PyPDF2, Vector Embeddings*

[Link to Project](#)

- RAG-based pipeline using OpenAI GPT and vector embeddings designed for automated legal document understanding across formats (PDF, DOCX, TXT); supports multi-format input and complex text extraction using **PostgreSQL and REST APIs**.
- Document processing system integrated with SQL Alchemy and PyPDF2 which achieves 99% text extraction accuracy on 100-page files within 30-60 seconds.

### Selective Content Hider - Chrome Extension Prototype | *JavaScript, HTML5, CSS3, Chrome APIs*

[Link to Project](#)

- Built a Chrome extension that empowers users to declutter any webpage by selectively hiding distracting elements, using persistent storage, smart CSS selector generation, and dynamic DOM observation, enhancing productivity and user control over web experiences.
- Engineered a lightweight, responsive popup interface with smooth CSS transitions and Mutation Observer support, enabling seamless interaction with dynamic content while ensuring hidden elements remain persistent across page reloads.

### Enterprise-Grade Multi-JDK CI/CD Pipeline with Jenkins and Maven | *Automation, Pipeline, DevOps*

[Link to Project](#)

- Engineered a robust CI/CD pipeline supporting 4 Java versions (8-17), implementing automated build verification and deployment stages using Jenkins and Maven, achieving 99.9% build success rate and leveraging Infrastructure as Code principles for repeatable, scalable builds.
- Architected an automated testing framework with JUnit 5 integration, implementing parallel test execution and real-time reporting in Jenkins pipeline, enabling 100% test coverage and reducing manual testing efforts by 85%.

### Algorand Explorer (Crypto Transactions) in VR | *A-Frame, WebVR, JavaScript*

[Link to Project](#)

- Developed a browser-compatible VR application integrating Algorand blockchain data, enabling users to explore transactions and blocks in a fully immersive environment boosting engagement and understanding of crypto ecosystems without technical setup.
- Engineered a seamless VR interface for Pera Wallet functionality, allowing users to interact with wallet features like account management and transactions inside a 3D space-pioneering an intuitive bridge between DeFi and immersive tech.

## EDUCATION

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### California State University Dominguez Hills

Carson, CA, USA

*Master of Science in Computer Science – Software Engineering Track (GPA: 3.75/4.00)*

Aug 2023 - May 2025

- **Related Coursework:** Data Structures and Algorithms, Computer Organization and Programming, Machine Learning, Artificial Intelligence, Object-Oriented Analysis and Design Methodology, Design and Analysis of Algorithms, Cloud Computing

### University of Mumbai

Mumbai, MH, India

*Bachelor of Engineering in Information Technology*

July 2012 - Dec 2016

- **Related Coursework:** Operating Systems, Distributed Systems, Data Mining and Business Intelligence, Computer Graphics, Big Data Analytics, Computer Networks