

# Vivek Gaddam

Albany, NY

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## SUMMARY

Full-stack developer with 3+ years of experience building scalable web applications and cloud solutions. Specialized in JavaScript, Python, and modern frameworks (React, Node.js, Express) with proven success in AI and IoT domains. Delivered projects that improve system performance through optimized architectures, CI/CD automation. Proficient with AWS and Azure with expertise in containerization, microservices, and accessibility-compliant UI development.

## EDUCATION

### University At Albany, State University of New York

*Master of Science in Computer Science*

August 2023 – May 2025

*Albany, NY*

### CVR College of Engineering, (JNTU)

*Bachelor of Technology in Electronics and Communication Engineering*

August 2019 – May 2023

*Hyderabad, India*

## EXPERIENCE

### Software Developer for WebNY

*New York State Office of Information Technology Services*

May 2024 – Present

*Albany, NY*

- Built and streamlined websites for NYS agencies using Drupal CMS, PHP, JavaScript, and Bootstrap, ensuring responsive, accessible, and secure interfaces across devices in compliance with WCAG and NYS policies.
- Refactored 50+ Drupal modules with advanced security controls, reducing potential exploits by 70% and improving backend efficiency through custom roles, caching strategies, and query optimization.
- Boosted user engagement by 30% and cut average page load time in half through CDN integration, mega menu navigation, and specific SASS enhancements.
- Delivered intuitive UI through iterative prototyping, smoke testing, and cross-browser QA, resulting in 80% uptime of all WebNY web properties and maintaining a high level of user interaction.
- Reviewed and maintained scalable, clean codebases aligned with accessibility and performance benchmarks.
- Created reusable, API-driven custom modules for editorial workflows and multi-agency dashboards, improving publishing turnaround time by 50%.
- Led DevOps automation with Jenkins, Docker, and YAML pipelines on Acquia Cloud, reducing deployment rollbacks by 60% and supporting horizontal scaling.

### Founder & CEO

*EFORGE NexGen Innovations Pvt. Ltd.*

March 2022 – April 2023

*Hyderabad, India*

- Founded and led a student startup delivering AI-driven prototypes for smart city and agricultural use cases, emphasizing automation, scalability, and security in final product delivery.
- Engineered cross-platform dashboards with React.js and Android apps integrated via Firebase and AWS, reducing backend latency by 40% and improving real-time analytics accuracy.
- Constructed predictive ML pipelines in Python, incorporating Selenium for task automation and model retraining, resulting in 35% downtime reduction in agricultural systems.
- Converted 3 AI/IoT prototypes into commercial-grade platforms, increasing client operational efficiency by 20% across logistics, agriculture, and municipal sectors.
- Applied OOP and algorithmic optimization to develop scalable APIs and secure data workflows, boosting system resilience and reducing average response times by 25%.
- Delivered data-driven investor presentations leveraging AI metrics and market insights, securing funding and driving a 30% increase in startup revenue.

### Research Intern

*NewGen Innovation Center, CVR College of Engineering*

January 2021 – March 2022

*Hyderabad, India*

- Designed and implemented a machine learning-based optimization model to solve environmental resource allocation problems for smart farming systems.
- Developed a real-time reporting dashboard using JavaScript, HTML, and CSS to visualize IoT-based agricultural data.
- Built API integrations for IoT sensors, ensuring seamless data collection and processing with backend services using Python, and AWS.
- Created prototype for a predictive weather station powered by IoT and ML for real-time monitoring, achieving 70% accuracy in precipitation forecasting.
- Conducted evaluations on system scalability and reliability, presenting findings in a research paper published in a Scopus-indexed journal.
- Optimized backend workflows by implementing scripts in Python to automate real-time data analysis tasks, improving overall system latency by 40%.

## PROJECTS

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### PlanVoyage – Destination Recommendation Web App

February 2024 – April 2024

- Built a full-stack travel genome application using Next.js, Express.js, MongoDB, and Tailwind CSS to suggest destinations based on user preferences like category, budget, weather, and activities.
- Implemented personalized recommendation engine using personalized algorithm based on user likes/dislikes; improved user engagement by 45%.
- Designed persistent like/dislike tracking per user using JWT-authenticated sessions and MongoDB, ensuring tailored recommendations with every interaction.
- Created a responsive UI with category-based navigation menu and dynamic filtering for streamlined user experience across desktop and mobile.
- Deployed the application on Vercel and tested for accessibility compliance, improving usability for screen reader users.

### AI based Smart Interview Preparation App (PrepSmart)

September 2024-December 2024

- Architected a scalable full-stack interview prep platform using React.js, TypeScript, and Tailwind CSS, delivering a modern, responsive UI for seamless user interaction.
- Produced secure session management with JWT authentication and role-based access control for the interview platform, mitigating potential vulnerabilities and improving data privacy by 70%.
- Implemented AI-driven feedback modules using GeminiAI and machine learning for evaluating code and spoken responses, including text-to-speech for technical interviews.
- Enabled real-time interactions with WebSocket for live video interviews, question narration, and performance tracking with session-based analytics.
- Deployed the app on AWS using EC2 and S3 for frontend hosting and backend services, following CI/CD practices to ensure high availability and capturing 95% of platform activity.

### E-Commerce Application

September 2024-December 2024

- Established a secure backend using Express.js and MongoDB, implementing JWT-based user authentication and session management with role-based access control; supported 1,000+ concurrent users with 99.9% uptime during testing.
- Containerized the entire application using Docker and deployed on Azure Kubernetes Service (AKS), ensuring scalable and fault-tolerant architecture.
- Set up CI/CD pipelines via Terraform and Azure DevOps, reducing manual deployment time by 80% and enabling automated testing and environment promotion.
- Configured Caddy within the Kubernetes cluster as a reverse proxy with automated HTTPS, improving response time by 35% and streamlining domain management.
- Integrated Azure Blob Storage for efficient media handling, reducing file load latency by 30% and securing access with SAS token policies.
- Performed unit testing with JUnit and integration with Postman.

### Smart Precision Farming Using IoT Data Analytics

June 2021-August 2022

- Devised a precision farming system using Python and Scikit-learn, achieving 90% accuracy in predicting optimal crop resource allocation based on real-time sensor data.
- Performed exploratory data analysis (EDA) with Pandas and Matplotlib to uncover agricultural trends, improving automation of irrigation and nutrient control decisions.
- Integrated IoT devices via The Things Network (TTN) and scripted data ingestion pipelines using Python scripts to streamline real-time monitoring.
- Formulated a mobile interface using Android Studio for farmers to access AI-driven recommendations, enhancing accessibility and promoting sustainable farming practices and improved crop yields by 10%.

### Algorithm Visualizer

November 2020

- Developed a website for sorting algorithms, providing visualization and customizations on a website. <https://Visualiser.io/>

## SKILLS

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**Programming Languages & Databases:** Java, C, C++, Python, JavaScript, COBOL (familiarity), Ruby, SQL, PostgreSQL, MongoDB, MySQL, Oracle Database

**Frontend Development:** HTML, UML, Twig, Tailwind, CSS/SASS, Drupal, AJAX, DOM, Software Design

**Developer Tools & Platforms:** VS Code, IntelliJ IDEA, Eclipse, Docker, pgAdmin, GCP, Webpack, Vite, Linux, Microsoft Office, LaTeX, Jenkins, NPM, Power Shell, Bootstrap

**Technologies/Frameworks & Cloud:** WordPress, .NET, React.js, Express.js, Node.js, GitHub, AWS, RestfulAPI, Vue.js, Angular.js, Ruby on Rails

**Frameworks/Tools:** React.js, Apache Kafka, Jenkins, Docker, .NET

**Project Management & Testing:** SDLC, JIRA, Agile Methodologies, Scrum, Selenium, Kernel, JUnit, Unit Testing, WCAG

## PUBLICATIONS & PATENTS

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Under Mathematical Statistician and Engineering Applications - Scopus Indexed on 12/21/2022

- “Smart Precision Agriculture using IoT Data Analytics” - [philstat.org.ph/1450](http://philstat.org.ph/1450)
- “A Machine Learning Perspective to Foster Accuracy and Prediction of Urbanization using Automatic Weather Station” - [philstat.org.ph/1451](http://philstat.org.ph/1451)

Patent published under Intellectual Property India (Government of India) in 2023

- “Data Analytics Powered Smart Precision Farming to Increase Crop Yield” - 202341008759
- “Machine Learning Powered IoT Weather Station to Predict the Rate of Urbanization” - 202341008760
- “Data Analytics Powered IoT Weather Station to Determine the AQI Index in a Micro Climatic Zone” - 202341027954

## CERTIFICATIONS

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Web Developer Certificate – UDEMY

Java, Python, JavaScript Programming - Hacker Rank

Database Programing with SQL – ORACLE