Varun Mahankali

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Summary

Detail-oriented Computer Science graduate student with hands-on experience in building full-stack web applications using Angular, Node.js, and AWS. Proficient in JavaScript, TypeScript, and CSS with a strong eye for responsive UI design and cross-browser compatibility. Skilled in developing scalable REST APIs, implementing CI/CD pipelines with GitHub Actions, and containerizing services using Docker. Experienced in debugging production issues, resolving bugs tracked via JIRA, and delivering clean, maintainable code in Agile environments. Strong foundation in data structures and algorithms with a passion for solving real-world problems using efficient and secure code.

Technical Skills

- **Languages:** C, C++, Java, JavaScript, TypeScript, Python, SQL, Data Structures and Algorithms
- **Frontend:** HTML, CSS, Bootstrap, Tailwind CSS, Angular, React.js
- **Backend:** Node.js, Express.js, NestJS, Spring Boot, MongoDB, MySQL
- **DevOps/Cloud:** AWS (EC2, S3, Lambda, RDS, CloudFront), Docker, GitHub Actions
- **AI/ML:** NumPy, Pandas, Scikit-learn, TensorFlow, Keras, OpenCV, Matplotlib
- **Tools:** Git, Postman, Swagger, VS Code, IntelliJ, JIRA, Figma, Agile/Scrum
- **Testing:** Jest, Mocha, React Testing Library, Jasmine, Karma, Cypress, Storybook

Professional Experience

Software Engineer – eGlobal Doctors (Remote)   *Jan 2023 – May 2025*

- Spearheaded the development of multilingual telehealth modules using Angular, TypeScript, and Nest.js, enabling real-time patient–doctor communication and handling 1K+ concurrent users with >99.9% uptime.
- Refactored legacy Angular components into modular, reusable units with lifecycle hook optimizations and RxJS for reactive patterns, increasing code reusability by 60% and improving onboarding for new developers by 30%.
- Built scalable REST APIs for appointment scheduling, real-time chat, and user profile management; implemented rate limiting, JWT authentication, and input validation to ensure system integrity and data security.
- Improved Angular frontend performance by 40% by implementing lazy loading, dynamic imports, ChangeDetectionStrategy.OnPush, and trackBy functions, reducing time-to-interactive on key views from 1.8s to 1.1s.
- Developed Angular services for state management, form validation, and HTTP communication with full TypeScript typings and API guards, reducing runtime errors by 45%.
- Designed secure and responsive UIs using Angular Material and custom SCSS components; ensured cross-browser compatibility and mobile responsiveness with thorough CSS debugging and unit testing.
- Enhanced frontend functionality and interactivity using core JavaScript principles such as event delegation, DOM manipulation, and asynchronous fetch handling.
- Debugged and resolved frontend and API issues tracked in JIRA, reducing open bug tickets by 35% and contributing to faster sprint closures.
- Orchestrated CI/CD pipelines with GitHub Actions and AWS CodePipeline, integrating unit and end-to-end testing using Jest and Cypress; reduced deployment time from 20 minutes to under 10 minutes.
- Led infrastructure migration from monolithic EC2-based setup to Dockerized microservices deployed on AWS ECS, integrated with S3, CloudFront, and RDS, improving scalability and deployment reliability.
- Integrated role-based access control (RBAC) using JWT and NestJS middleware guards, reducing unauthorized access attempts by 80% and improving audit traceability across admin and user roles.
- Collaborated with a cross-functional team of designers, QA engineers, and product managers using Agile methodology, delivering sprint goals consistently across 40+ production releases.

Frontend Developer Intern – HealthTap (Hybrid)   *May 2022 – Aug 2022*

- Developed and integrated 20+ reusable and responsive UI components using React, Redux, and JavaScript for real-time healthcare dashboards used by doctors and patients.
- Collaborated closely with the design team to translate Figma mockups into pixel-perfect components using HTML, CSS, and Bootstrap, ensuring design consistency and responsiveness across devices.
- Migrated legacy class-based components to modern functional components with React hooks, improving code readability, reducing bugs, and aligning with modern best practices.
- Optimized state management with Redux by modularizing reducers and actions, reducing re-renders and improving application performance by 30%.
- Debugged and resolved frontend bugs tracked in JIRA, collaborating with QA engineers to reproduce issues and verify fixes, which contributed to a 25% reduction in UI-related production incidents.

- Improved accessibility scores by 20% by implementing ARIA roles, semantic HTML, and screen reader support based on WCAG 2.1 guidelines.
- Conducted manual and automated cross-browser testing to ensure consistent user experience across Chrome, Firefox, Safari, and Edge.

Projects

Eagle – UNT Alumni App *HTML, CSS, Bootstrap, JavaScript, React, Node.js, MongoDB, AWS, Docker, JWT, GitHub Actions*

- Designed and structured responsive web pages using HTML and Bootstrap, ensuring pixel-perfect layout and mobile-first responsiveness across browsers and screen sizes.
- Used vanilla JavaScript for client-side interactivity such as form validation, modal toggling, and DOM manipulation before integrating reusable logic into React components.
- Built dynamic, modular React components with hooks and context API to manage authenticated alumni interactions like registration, dashboard navigation, and event RSVPs.
- Developed secure RESTful APIs using Node.js and Express.js with JWT-based authentication and role-based access control, including token refresh and error handling.
- Modeled MongoDB collections to store user profiles, login sessions, feedback, and event data using Mongoose schemas with validation, indexing, and embedded documents.
- Implemented server-side pagination and filtering for large datasets (e.g., alumni search, event history), reducing frontend load time by over 40%.
- Containerized the backend with Docker and deployed it on AWS ECS; connected to MongoDB Atlas for managed, scalable NoSQL database hosting.
- Automated CI/CD workflows via GitHub Actions, with integrated ESLint, unit tests, and staging deployment scripts for each pull request.
- Configured AWS S3 for static frontend hosting and CloudFront for CDN distribution, achieving faster global access and reducing TTFB (Time to First Byte).
- Integrated monitoring with AWS CloudWatch and Slack notifications to track API usage and deployment success/failure in real time.

Patient Obligation Perceiver Using Eye Gestures *Python, TensorFlow, OpenCV, NumPy, Matplotlib, Docker*

- Developed a real-time eye-gesture recognition system using Convolutional Neural Networks (CNNs) trained on webcam-captured datasets with TensorFlow and Keras, achieving over 90% accuracy.
- Leveraged OpenCV for advanced image processing — including Gaussian filtering, grayscale conversion, contour detection, and ROI extraction — to enable accurate eye movement tracking.
- Used NumPy for efficient matrix operations on image arrays and Matplotlib for visualizing training loss, accuracy metrics, and confusion matrices during model evaluation.
- Built a lightweight GUI using Python's Tkinter to provide real-time command feedback and auditory cues, designed to aid hands-free interaction for disabled users.
- Packaged the entire project into a Docker container to ensure portability and quick deployment across different machines, including Linux-based embedded systems.
- Optimized model inference speed by converting models to TensorFlow Lite, reducing memory usage and achieving sub-300ms latency per frame.
- Received a patent for the innovative use of eye gestures as a non-verbal communication interface, enhancing accessibility for individuals with physical impairments.

Certifications and Extra Activities

- **J.P. Morgan Chase Investment Banking Job Simulation on Forage** *July 2025*
  - Identified an ideal M&A target for a client based on an assessment of their strategic and financial criteria.
  - Constructed a DCF model to calculate the valuation of the M&A target and adjusted the model to account for a competitor bid and supply chain interruption.
  - Created a 2-pager for the client containing a company profile and summary of the auction process.
- AWS Certified Developer – Associate

Education

University of North Texas, Denton, TX   M.S. in Computer Science, GPA: 3.818 / 4.0
VNR VJIET, Hyderabad, India   B.E. in Computer Science, GPA: 8.7 / 10.0