Mantavya Mahajan

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EDUCATION

The Pennsylvania State University   **University Park, PA**

B.S.: Computer Science, Mathematics

Minor: Business Fundamentals   Graduation: December 2025

Relevant Courses: Data Structure and Algorithms, Object-Oriented Programming   GPA: 3.60/4.00

Computer Architecture, System Design, Database Systems   Dean's List (5/6) semesters

Technical Skills

Programming languages: Python, Java, C, C++, TypeScript, JavaScript, C#

Software Development: Data Structures & Algorithms, OOP, Multithreading, System Design, API Development

Backend: Node.js, Express.js, Flask, Spring Boot, GraphQL, Django

Databases: PostgreSQL, MySQL, MongoDB, Firebase, Derby Database, Supabase

DevOps & Cloud: Docker, Kubernetes, AWS (Lambda, EC2, S3), CI/CD, Jenkins, Terraform, Vercel

Testing & Debugging: Jest, Mocha, PyTest, Postman, Selenium, Puppeteer

Tools: Git/GitHub, Linux, JIRA, Redis, Celery, WebSockets

Professional Experience

Software Engineering Intern   **Delhi, India**

Alchem International   May 2024 – Aug 2024

- Designed and developed **scalable microservices** architecture, reducing system downtime by **25%**.
- Implemented **multi-threading and caching mechanisms**, improving API response time by **30%**.
- Optimized database indexing and queries in **PostgreSQL**, cutting query execution times by **30%**.
- Enhanced **CI/CD pipelines**, reducing deployment time by **30%** and ensuring seamless integration.

Software Developer Intern   **Remote**

M8   Aug 2024 – May 2025

- Developed **efficient and scalable APIs** for handling high concurrent user traffic, optimizing request routing and load balancing, improving throughput by **60%**.
- Implemented **role-based access control (RBAC)** and **OAuth authentication** to enhance security.
- Designed and maintained **unit and integration tests**, expanding test coverage and automating test suites, ensuring system reliability and reducing bugs by **35%**.

Projects

Real Estate Web App (React, Node.js, PostgreSQL, Stripe):   Feb 2025

Developed an end-to-end real estate listing platform with a clean React frontend and secure backend. Integrated Stripe for payments and Google Maps API for property location services. Designed a secure authentication system (JWT, OAuth2) and role-based dashboards.

Scalable SaaS Platform (MERN Stack, AWS, Redis, GraphQL):   Dec 2024

Built a multi-tenant SaaS platform with user authentication, subscription handling, and analytics dashboards. Used React.js & Next.js for a dynamic UI, improving load speeds by 40%. Developed serverless functions (AWS Lambda) to process payments securely via Stripe API.

Meal Plan Optimizer (React, Firebase, TypeScript, Tailwind, Puppeteer, Express):   Sept 2024

Built a web app to analyze PSU dining transactions with secure web scraping and MFA integration. Designed a dashboard for spending insights and recommendations, optimizing meal plan usage by 15%. Automated transaction categorization and budget tracking while ensuring security with Firebase authentication and serverless functions, reducing API response time by 40%.

Leadership Experience

Math 140/Phys 211/CMPSC Learning Assistant   Aug 2023 – Dec 2024

- Led 100+ one-on-one tutoring sessions, earning 95% positive feedback for clarity, patience, and complex problem-solving
- Enhanced learning materials by streamlining content into more concise formats, improving efficiency

Certifications

- AWS Certified Developer – Associate (2024), Docker & Kubernetes for Backend Engineers (2024), Data Structures & Algorithms Certification (Leetcode, 2024), System Design & Architecture (2024)