# MANASWI KULKARNI

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## SUMMARY

Computer Science Master's student focused on AI-driven development and cloud infrastructure. I am passionate about using technology to solve real-world problems and creating systems that improve user experiences. Outside of my technical work, I am an enthusiast in the university art club, finding that artistic creativity fuels my engineering logic.

## EDUCATION

**Worcester Polytechnic Institute (WPI)** **August 2024 – May 2026**

Master of Science in Computer Science

**Jawaharlal Nehru Engineering College (JNEC)** **June 2020 – July 2024**

Bachelor of Technology in Computer Science and Engineering with Honors in Artificial Intelligence

## PROFESSIONAL EXPERIENCES

**Full Stack Developer – Gridify** | Boston, MA **September 2025 – Present**

- Spearheaded the complete transition from DocuSign to BoldSign by conducting vendor analysis, prototyping solutions, and leading contract negotiations, resulting in a fully migrated, cost-efficient e-signing ecosystem.
- Accelerated developer onboarding and testing cycles by engineering a one-command local stack (Bun + Docker + Supabase) with automated database seeding, eliminating manual data entry.
- Established a robust quality assurance process by integrating Playwright for automated E2E testing and performing rigorous code reviews, significantly reducing production bugs.

**Machine Learning Engineer – NuVant Systems (A3 Global)** | Boston, MA **May 2025 – August 2025**

- Engineered an ML pipeline that reduced battery analysis time from 3 hours to 2 minutes (99% efficiency gain), replacing manual verification with automated intelligence.
- Developed a real-time hardware monitoring suite using Electron, React, and FastAPI, integrating NI-VISA protocols and LabVIEW to visualize anomaly detection metrics.
- Designed a modular configuration system to support diverse battery types, enhancing system flexibility without code changes.
- Defined and implemented low-level communication protocols between custom testing equipment and software, ensuring zero-latency data transmission.

**Full Stack Developer – Atlas Copco Group**| Pune, India **January 2024 – June 2024**

- Developed real-time manufacturing dashboards using React and Plotly.js, providing instant visibility into sensor data that allowed operators to identify production bottlenecks immediately.
- Architected REST APIs using Flask and Node.js backed by a Spark-based ETL pipeline, utilizing Parquet optimization to reduce data storage costs by 30%.
- Deployed automated CI/CD pipelines via Docker and Jenkins and integrated Jupyter analytics directly into the production UI, streamlining the data analysis workflow.

**Research Intern – Applied Technology Solutions Inc. (ApTSi)** | Massachusetts, US **January 2022 – December 2023**

- Rapidly transitioned from frontend basics to full-stack implementation, developing complete web applications using Angular, Node.js, and Axios within the first six months.
- Modernized legacy data flow systems by integrating modern UI frameworks, optimizing API calls to reduce user interaction time by 5 seconds per task.
- Engineered transaction processing logic and implemented database optimizations, driving a 20% increase in overall system efficiency.
- Directed product improvement strategies based on comprehensive market analysis and user behavior research, presenting key findings to senior leadership.

## ACADEMIC PROJECTS

**SyncQues – AI-Powered Q&A Platform (Startup Prototype)** **June 2025 – Present**

- Architected a scalable backend for a pre-launch startup using GraphQL (Apollo) and MongoDB, engineering the schema to handle simulated loads of 10k+ users with less than 100ms latency.
- Built an asynchronous AI answer engine using Celery task queues and Redis, enabling the system to process 500+ requests/minute without blocking user UI threads.
- Secured the ecosystem using RBAC and OAuth 2.0 while optimizing AWS (EC2/Lambda/S3) infrastructure, reducing API response times by 30% through strategic caching and database indexing.

**BigDocBot – LLM-Powered Code Summarization & Static Analysis Tool** **March 2025 – May 2025**

- Implemented a code summarization tool using LangChain, CodeBERT, and CodeT5 to extract function-level summaries, complexity, and readability metrics from Python and JavaScript codebases.
- Constructed AST-based parser to generate line-by-line LLM explanations, improving code maintainability.
- Developed an interactive UI to display summaries, scores, and token-based heatmaps with LLM result caching.

**VizBotz – AI-Driven Data Visualization Assistant** **February 2025 – April 2025**

- Created a Streamlit tool that converts uploaded datasets into Altair/Vega-Lite charts with LLM-generated insights.
- Integrated OpenAI and Gemini APIs with a local RAG fallback, supporting offline semantic insight generation and metadata parsing.
- Modularized backend using prompt templating, schema detection, and natural language query handling for dynamic chart editing.

## SKILLS

**Languages:** Python, Java, JavaScript, TypeScript, SQL, C, R, Go, HTML/CSS

**Frameworks:** React, Next.js, Node.js, Flask, FastAPI, Three.js, LangChain

**AI/ML & LLMs:** PyTorch, TensorFlow, Scikit-learn, OpenAI API, CodeBERT, RAG Pipelines

**Databases & APIs:** PostgreSQL, MongoDB, Supabase, GraphQL, REST APIs, Stripe API

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

**Tools & Testing:** Playwright, Git, JIRA, Figma, Streamlit, Plotly, LabVIEW, NI-VISA

## CERTIFICATIONS

**Microsoft Azure AI-900**

**Microsoft Azure DP-900**

## LEADERSHIP QUALITIES AND MANAGEMENT

- Building Manager, Rubin Campus Center (WPI) – Oversaw campus facility operations, ensuring smooth day-to-day functioning by coordinating maintenance, managing resources, and addressing student and staff concerns promptly and efficiently.
- Actively led and participated in key student organizations including the Computer Society of India (CSI), GeeksforGeeks Student Chapter (GFG) and National Social Services (NSS).