

# Jahnavi Panchavati

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## Summary

Software Engineer with 2+ years of experience building scalable backend services and intuitive user interfaces. Proficient in enhancing engineering productivity, and contributing to quality product delivery across the full software development lifecycle.

## Education

**North Carolina State University**, Raleigh, NC

**Aug 2023 - May 2025**

**MS in Computer Science - GPA: 3.9/4.0**

**Coursework:** Design and Analysis of Algorithms, Generative AI for Software Engineering, Cloud Computing Technology

**Certifications:** Google Associate Cloud Engineer - In progress

**PES University**, Bengaluru, India

**Aug 2017 - May 2021**

**Bachelor of Technology in Electronics and Communication Engineering - GPA: 8.7/10.0**

**Coursework:** Data Structures, Database Management Systems, Computer Networks, Neural Networks

## Technical Skills

**Languages:** Python, JavaScript, TypeScript, C#, Java, SQL

**Frameworks & Libraries :** React, Angular, Flask, FastAPI, .NET, Node.js

**Databases & Tools :** MongoDB, MySQL, DynamoDB, Postman, RabbitMQ

**Cloud & DevOps :** AWS (S3, IAM, Lambda), Git, GitHub, Docker, Kubernetes

## Work Experience

**Research Assistant, North Carolina State University, USA**

**Jan 2025 - Present**

- Built a **Python**-based backend pipeline to analyze developer screen images, using OpenAI **GPT-4** to detect and classify development tools, demonstrating experience in scalable backend processing and API integration.
- Integrated an object detection model into the Python backend to generate bounding boxes and annotate identified tools.

**Software Engineer, Accenture Solutions, India**

**Jun 2021 - Jul 2023**

- Designed and maintained scalable **RESTful APIs** using **C#** and **.NET** in a fast-paced **Agile** environment, handling **100+** daily requests and contributing to production-grade backend services.
- Contributed to high-quality frontend engineering by optimizing **Angular**-based UIs for responsiveness and accessibility, reducing support tickets by **20%**.
- Developed a message-driven architecture using **RabbitMQ** to support seamless integration of ML APIs, reducing data processing latency by **12%** and improving end-to-end system responsiveness.
- Implemented data-driven **D3.js** dashboards to track project-level KPIs, supporting continuous feedback loops and stakeholder visibility into delivery progress.
- Refactored and optimized **MongoDB** queries for high-load environments, ensuring fault-tolerant data access.

**Data Science Intern, Pivotchain Solutions, India**

**Jan 2021 - Jun 2021**

- Integrated deep learning models for computer vision tasks using **TensorFlow** and **OpenCV**, achieving **90%** precision in color detection by applying **CNN** architectures and transfer learning techniques.
- Automated large-scale dataset collection and preprocessing for **10,000+** images, streamlining data pipelines and boosting model performance by **5%**.

## Projects

**Intelligent Document Processing System - [\[GitHub\]](#)**

- Built a Retrieval-Augmented Generation chatbot system, reducing manual document analysis time through intelligent backend orchestration and **LLM** integration.
- Developed a scalable backend using **FastAPI** and integrating with a **ReactJS** frontend for real-time user interaction.
- Implemented MongoDB vector search to optimize query relevance and retrieval speed, enhancing the backend system's ability to serve context-aware responses efficiently.

**Cloud-Based File Storage System**

- Implemented monolithic RESTful API using **Node.js**, enabling secure file upload, retrieval, and deletion via **AWS S3**, with robust support for authenticated user actions.
- Designed **JWT**-based user authentication and integrated **DynamoDB** for managing user metadata, enforcing fine-grained access control using **AWS IAM** policies and pre-signed **S3** URLs.
- Containerized the backend using **Docker** with a multi-stage build process, streamlining production deployments and ensuring consistency across development and cloud environments.