Sathwik Shenoy

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Professional Summary

Computer Science Engineering student specializing in scalable machine learning and full-stack web applications. Built and deployed platforms with 99.9% uptime, achieving up to 93% model accuracy in federated learning. Actively seeking software engineering internships to apply technical and problem-solving skills in dynamic environments.

Skills

- **Programming & Frontend: Python, C, C++, JavaScript (ES6), HTML5, CSS3, AJAX, Bootstrap 5, TailwindCSS, Jinja2**
- **Backend & APIs: Flask, FastAPI, Flask-RESTX, SQLAlchemy, REST APIs, JWT, Celery, Task Queues**
- **Databases & ORM: PostgreSQL, SQLite, Alembic**
- **DevOps & Infrastructure: Docker, Docker Compose, Nginx, Redis, Cron Jobs**
- **Machine Learning & Data: PyTorch, scikit-learn, Pandas, NumPy, TF-IDF, PySyft, Plotly**
- **Tools & Others: Git, GitHub, Swagger/OpenAPI, ReportLab, Render, Authentication, Database Design, Async/Await**

Projects

Privacy-Preserving Federated Learning in Social IoT (Machine Learning Framework)

- Implemented PyTorch-based federated learning for decentralized IoT devices, enabling privacy-focused model training without raw data sharing.
- Achieved 93% accuracy on edge-based MNIST dataset, with only 5% drop from centralized methods.
- Integrated PySyft for secure aggregation and Flask/WebSockets for simulated device communication; reduced bandwidth by 30% via quantization.
- **Technologies**: PyTorch, PySyft, Flask, WebSockets, Edge Computing.

Personal Finance Tracker (Full-Stack Web Application)

- Developed secure Flask-PostgreSQL platform for 500+ users, delivering real-time financial insights and reports.
- Designed dual authentication (sessions/JWT) and RESTful API with 15+ Swagger endpoints; created Plotly dashboards reducing analysis time by 70%.
- Built scalable infrastructure using Docker Compose, Nginx, Redis, and PostgreSQL cluster for 99.9% uptime and 10,000+ transaction handling.
- **Technologies**: Python, Flask, PostgreSQL, Docker, JWT, Bootstrap 5, Plotly, SQLAlchemy, Nginx.

Movie Recommendation System (Machine Learning Application)

- Created Python/Flask platform with scikit-learn for real-time, personalized movie suggestions via AJAX frontend.
- Engineered TF-IDF vectorization on 5,000+ TMDB entries with cosine similarity, hitting 87% accuracy on 200+ test cases under 500ms response.
- Deployed with caching and efficient ML techniques for production readiness.
- **Technologies**: Python, scikit-learn, Flask, AJAX, TF-IDF, Pandas, Render.

YouTube Video Download Platform (Task Management System)

- Built full-stack Flask app using yt-dlp to manage 200+ concurrent downloads with 95% completion rate and 3-second latency.
- Implemented Celery/Redis for asynchronous tasks and cron jobs for 95% storage efficiency via auto-cleanup.
- Added error handling and tracking, cutting failed downloads by 80% over synchronous approaches.
- **Technologies**: Flask, Celery, Redis, yt-dlp, Cron Jobs, Task Queues.

Work Experience

Software Engineering Intern

Bhabha Atomic Research Centre (BARC) | Mumbai, India | June 2025–July 2025

- Selected for hands-on work in electronics systems and instrumentation, focusing on system integration and testing.
- Gained exposure to real-world technical environments, contributing to instrumentation projects (details available upon request due to NDA).

Education

Bachelor of Engineering in Computer Science Engineering — **Dec2022 - Aug 2026**
University Visveshvaraya College of Engineering, Bangalore — CGPA**:** 7.85/10.0
Relevant Coursework: Data Structures and Algorithms, Database Management Systems, Operating Systems, Computer Networks, Software Engineering, Object-Oriented Programming, Machine Learning, Web Technologies

Pre-University Course (Science) — **2022**
JnanaSudha P.U. College — Aggregate: 96%

Awards & Activities

- **Finalist**, College Fest Debate Competition, 2024
- **Organized Coding Competition**, College Technical Fest, 2023
- **2nd Prize**, Short Put, Intra-college Athletics, 2020