

Bhavani Shankar Mukka

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Professional Experience

MSME360 | Backend Engineer Intern

Jun 2026 - Aug 2026

- Engineered an event-driven ML inference pipeline using **Celery** and **RabbitMQ** to offload heavy demand forecasting and Invoice OCR tasks, reducing FastAPI gateway request-response latency from **over 5s to under 15ms**.
- Avoided over **95% of high-horizon write volume** on Postgres by architecting a storage strategy that compresses multi-dimensional prediction arrays into optimized JSON payloads stored in **Supabase Object Storage**.
- Advised the full-stack team on frontend polling efficiency by introducing a **Redis state-caching layer**, eliminating direct database polling and **establishing dead-letter queues (DLQs)** for fault-tolerant task execution.

Technical Skills

- Languages: Python, C++, Java
- Backend: FastAPI, WebSockets, gRPC, Microservices, RabbitMQ
- DevOps & Tools: Docker Compose, Git, GitHub Actions, Linux (Ubuntu), LGTM Stack
- Databases: PostgreSQL, Redis
- Cloud: Microsoft Azure, Supabase, GCP
- Testing: pytest, k6 tests
- Other Tools & Technologies: Next.js, MongoDB, Express.js

Projects

Social Media Backend | FastAPI, PostgreSQL, Redis, Celery/RabbitMQ, Docker, LGTM Stack, Azure, GitHub Actions, WebSockets, k6

- Designed and deployed a scalable cloud backend on Azure (Standard_B2ats_v2, 1 GB RAM) with 60+ REST endpoints, real-time WebSocket chat & notifications using FastAPI.
- Offloaded heavy operations (email delivery, real-time notifications) to Celery/RabbitMQ workers, **cutting core API response times by up to 90% (<500 ms)**.
- Load-tested 12 core endpoints with over 100 virtual users and **achieved 66.28 RPS at a 98% success rate (p95 ~45 ms)** under severe resource constraints (2-core CPU, <200 MB available RAM) with light database load.

Minicorn | Python, Sockets, asyncio, WSGI, ASGI, WebSockets

- Engineered a zero-dependency, PEP 3333 compliant Python server that supports both synchronous WSGI (Flask/Django) and asynchronous ASGI (FastAPI) frameworks in Development.
- Built native, RFC 6455 compliant WebSocket support directly into the ASGI event loop, enabling stateful connection upgrades (HTTP 101) and automated heartbeats using keepalive ping/pong frames.

Achievements & Certifications

- Derive Insights from Big Query Data** – Google Skills | Issued July 2026
- Cross-Team Engineering Quality:** Reviewed and approved over 2+ Pull Requests (PRs) which includes 20+ commits across the Full-Stack and ML teams at MSME360, refactoring architectural faults and fragile code to ensure production quality.
- Developed and maintained public repositories with **500+ cumulative stars on GitHub**.

Education

BTech at ANITS (CSE) - 8.7 CGPA

2024 - 2028