VISHNU VARDHAN MANIVANNAN
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WORK EXPERIENCE

Software Development Engineer L1, HipBar Pvt. Ltd., India (June 2019 – Dec 2021)

- Led the design and development of an in-house promotion engine, replacing third-party services and reducing operational costs by 72%.
- Boosted authentication service performance by integrating Redis caching, reducing database lookups by ~40% and significantly lowering API response latency.
- Migrated one-third (~33%) of HipBar's core Python microservices to Golang, leveraging Gin and gRPC to improve concurrency, throughput, and runtime efficiency.
- Built RabbitMQ/NATS-based asynchronous worker systems for notifications and internal event processing, improving scalability and decoupling distributed microservices.
- Standardized observability across services using Jaeger, OpenTracing, and Sentry, enabling trace propagation, distributed debugging, and better error visibility.
- Enhanced system reliability by adding meaningful test coverage, strengthening environment-based configuration handling, and supporting secure secrets management.
- Collaborated with DevOps to ship production-ready Docker images and support repeatable deployments across environments.

SKILLS & TOOLS

Programming Languages: Python, Golang, C++
Backend Development: Gin, gRPC, Docker, Messaging Queues (NATS, RabbitMQ, ZeroMQ), Postman
Databases & Storage: PostgreSQL, MySQL, Redis, Memcached, MinIO
Observability & Monitoring: Sentry, Kibana, OpenTracing, Jaeger
Tools & Platforms: Git, GitHub, Linux/Unix, Jupyter Notebook, Vim, Jira, ClickUp

PROJECTS

GoDrive (Cloud Storage Backend)

- Built a production-style cloud storage backend using Go microservices, gRPC, and JWT-based authentication, with clear boundaries for auth, metadata, and file operations.
- Implemented upload/download flows using MinIO presigned URLs, enabling stateless access with automatic expiry.
- Designed PostgreSQL schemas for users and files, adding soft-delete support and indexing.
- Developed NATS workers to process storage events: insert file metadata after uploads and permanently delete objects after a grace period.
- Containerized all services with Docker Compose (gateway, metadata, storage, DB, MinIO, NATS).
- Currently developing a React + TypeScript frontend to integrate with the backend.

Wikipedia Web Traffic Forecasting

- Built an ensemble forecasting model combining ARIMA and LSTM to predict 18 months of Wikipedia page views, applying large-scale preprocessing on ~145K time series.
- Improved forecast accuracy by ~14% RMSE over the best individual model, validated using RMSE and SMAPE, demonstrating the effectiveness of hybrid statistical–deep learning approaches.

EDUCATION

University at Buffalo, The State University of New York (August 2023 – December 2024)
Master of Science: Industrial Engineering (Data Analytics Concentration) **GPA**: 3.51/4.0
Imarticus Learning (Jan 2022 – Oct 2022)
Graduate Certificate: Data Analytics and Machine Learning **GPA**: 9.61/10