

## 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%.
- Improved 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.
- Implemented 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.
- Strengthened reliability by designing clean REST APIs, adding comprehensive unit tests, and managing secure configuration with environment variables and secrets.
- Created Dockerfiles and built Docker images for the microservices I owned, collaborating with the DevOps team on production deployments.

### 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