Hritwik Biyani

Stony Brook, NY | biyanihritwik@gmail.com | +1 (934) 227 – 8432 | linkedin.com/in/hritwikbiyani | hb-hello.github.io

EDUCATION

Stony Brook University — **Stony Brook, New York**
Master of Science in Computer Science — *August 2025 – August 2027*
Relevant Coursework: CSE 535 (Distributed Systems), CSE 506 (Operating Systems - ongoing)

MIT World Peace University — **Pune, India**
Bachelor of Technology in Computer Science — *July 2017 – July 2021*

TECHNICAL SKILLS

Programming Languages: Java, C, C++, Python, JavaScript, Bash, SQL, NoSQL, GraphQL, HTML, CSS/SASS
Tools / Frameworks: Git, Snowflake, Databricks, AWS, dbt, Node.js, Flask, Neo4j, Docker, Airflow, Angular
Skills: Distributed Systems, CI/CD, Data Structures, REST APIs, Consensus Protocols, Concurrency, System Design

WORK EXPERIENCE

ZS Associates — **Pune, India**
Senior Data Engineer — *July 2023 – July 2025*

- Engineered a batch-processing pipeline to automate data ingestion from 40+ sources (REST APIs, FTP, SQL), replacing manual form entry and reducing onboarding time by 2-3 weeks per source.
- Led a team of 4 to architect a scalable Data Change Request system using Azure Functions and SQL Stored Procedures to handle high data volumes, processing 4,000+ requests and saving ~40 hours of manual cleaning.
- Drove the migration of legacy analytics workloads to Snowflake and Databricks, redesigning table structures to improve query performance and reduce backend latency.
- Developed a FastAPI service implementing advanced prompt engineering with LLMs (Gemini/GPT-4) to deliver real-time, context-aware insights, streamlining complex research workflows for pharmaceutical KAMs.

ZS Associates — **Pune, India**
Data Engineer — *November 2020 – June 2023*

- Built a Node.js backend for real-time contracting scenario analysis, processing tens of thousands of rows via configurable algorithms to optimize contract selection and boost ROI by 30%+.
- Developed a full-stack graph visualization tool using D3.js and Neo4j, writing optimized Cypher queries to efficiently render complex health system hierarchies with traversals across 10,000+ nodes.
- Engineered a scalable Spark pipeline to process 100TB+ of complex, nested JSON datasets, utilizing strategic partitioning to optimize compute costs.

PROJECTS

Practical Byzantine Fault Tolerant System | *Stony Brook University* — **August 2025 - October 2025**

- Developed a high-throughput PBFT consensus protocol in Java featuring a collector node pattern to reduce communication overhead as well as prune message logs with Checkpointing and Threshold Signatures.
- Wrote extensive test cases to simulate network partitions, timing attacks, and equivocation, ensuring the protocol recovered correctly from Byzantine failures.

Sharded Transactional Datastore (2PC + Paxos) | *Stony Brook University* — **October 2025 - December 2025**

- Built a distributed, in-memory key-value store in Java supporting cross-shard ACID transactions and linearizable consistency, with row-level locking for high performance.
- Implemented Multi-Paxos for intra-shard replication and Two-Phase Commit (2PC) for atomic cross-shard transactions, ensuring data integrity across distributed nodes.
- Optimized for high throughput (~5000 TPS) using multi-threading and non-blocking I/O; implemented dynamic sharding and cluster reconfiguration to handle node failures and scaling.