Nagarjuna Kocharla (Arjun)
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LinkedIn | GitHub | Portfolio

PROFILE

Software Engineer with **4+ years** of experience designing and scaling **high-performance backend** systems, distributed architectures, and real-time data pipelines. Proficient in **.NET (C#), Python, Java, and SQL/NoSQL** databases (**PostgreSQL, SQL Server, Redis, MongoDB**), with expertise in building cloud-native solutions **on AWS and Azure using Docker, Kubernetes, and Terraform**. Skilled in performance tuning, system optimization, and production incident management, with a proven ability to deliver resilient, scalable systems under high load.

SKILLS

- **Programming Languages:** Python, Golang, C#, C++, Java, JavaScript, SQL
- **Frameworks & Libraries:** .NET Core, Entity Framework, React.js, Node.js, Django, Flask, TensorFlow.
- **Databases:** PostgreSQL, MySQL, SQL Server (MSSQL), MongoDB, Cassandra, Redis
- **Cloud & DevOps:** AWS, Azure, Docker, Kubernetes, Terraform, Snowflake
- **Messaging & Data Systems:** Kafka, Elasticsearch, gRPC, Debezium
- **Tools & Practices:** Git, Jenkins, CI/CD pipelines, Agile methodologies, XUnit

WORK EXPERIENCE

Software Engineer 06/23 - Present
CentrAlert, Charlotte, NC

- **Designed and scaled a distributed backend system for an emergency communications platform serving 100,000+ users, using .NET (C# 9.0+), Python, and SQL Server; architected REST and gRPC APIs, reducing end-to-end latency by 40% and enabling seamless third-party integrations.**
- **Optimized multithreaded backend services** through advanced task scheduling, thread pooling, and concurrency tuning in .NET, increasing system throughput by **30%** and reducing peak-time processing latency by **25%**.
- **Evaluated and implemented Apache Iceberg, Delta, and Hudi data lake technologies to improve data management and querying performance for the emergency communications platform.**
- **Designed and deployed a containerized, Kubernetes-based microservices architecture for the backend system, leveraging Docker and Terraform for infrastructure as code, to improve scalability and enable seamless deployments.**
- **Engineered a real-time, low-latency search capability** leveraging **Elasticsearch**, Kafka, and **Debezium**, achieving sub-second data indexing and rapid retrieval of critical alerts under high-load production conditions.

Software Development Engineer 07/19 - 07/21
Tata Consultancy Services, Hyderabad, India

- **Engineered and optimized high-performance PostgreSQL and SQL Server databases by tuning complex queries, implementing B-Tree and Hash indexes, and applying table partitioning, reducing query latency by 40% and boosting system scalability by 30% under production load.**
- **Designed and implemented a distributed data processing pipeline using Apache Spark and Apache Flink, enabling real-time data ingestion, transformation, and analytics for mission-critical business applications.**
- **Automated database cluster provisioning, version upgrades, and seamless migrations using Python, Ansible, Terraform, and Docker, integrating with Jenkins CI/CD pipelines to cut deployment times by 50% and ensure zero-downtime releases across cloud environments.**
- **Designed and deployed distributed database architectures** (**PostgreSQL, Redis**) incorporating replication, sharding, and fault-tolerant configurations, achieving **99.99% uptime** and a **3x improvement in high-concurrency transaction throughput**.

INTERNSHIPS

- **Evaluated and recommended the adoption of Trino (formerly Presto) for high-performance SQL querying over large datasets, leading to a 30% improvement in analytical query response times.**

Software Engineering Intern 05/22 - 08/22
CAMP Systems International, Merrimack, NH

- **Designed and implemented** a unified **Multi-Factor Authentication** (MFA) system using **Identity Server** and **OAuth** 2.0 for the CAMP Engine Maintenance suite, reducing client authentication issues by **40%** and strengthening application security layers.
- **Optimized application-to-database mapping** with **Entity Framework** (C#/.NET), integrated PostgreSQL for scalable data management, and leveraged **AWS S3** for object storage, improving horizontal scalability to efficiently handle increased user loads.
- **Developed and automated unit testing suites** using **XUnit** in C#, contributing to a **20% reduction in critical production issues** and enhancing deployment confidence.

Peer Tutor, Data Science 10/21 - 01/22
University of Massachusetts at Lowell, MA

- **Tutored graduate students** in Data Science and Machine Learning concepts using **Python, R, Scikit-Learn**, and **TensorFlow**, designing tailored learning materials and contributing to academic success for a cohort of **30+ students**.

EDUCATION

Master of Science in Computer Science 08/21 - 05/23
University of Massachusetts at Lowell, MA

Bachelor of Technology in Electronics and Communications Engineering. 07/15 -05/19
SreeNidhi Institute of Science and Technology (SNIST), Hyderabad, India.