Nagarjuna Kocharla (Arjun)

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# 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 new data technologies including Apache Iceberg, Apache Flink, and Trino/Presto to enhance the data lakehouse architecture, improving data ingestion, processing, and querying capabilities.**
* **Led architecture design sessions with cross-functional teams to ensure the data lakehouse components met performance, scalability, and reliability requirements, mentoring junior engineers on best practices.**
* **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

* **Designed and deployed cloud-based data infrastructure using AWS and Azure services, including S3, Redshift, and Snowflake, to create a scalable and fault-tolerant data lakehouse architecture.**
* **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.**
* **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 for mission-critical applications.**
* **Developed and deployed containerized microservices using Docker and Kubernetes, integrating with CI/CD pipelines to enable rapid, reliable, and scalable application deployments across cloud environments.**

**INTERNSHIPS**

**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.