

# Aditya Sugandhi

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## SUMMARY

Software Engineer with expertise in **systems programming, parallel/asynchronous computing, and Linux-based development**. Built high-throughput async systems scanning 35k+ devices across 172+ networks with 99.2% accuracy. Experience with **distributed compute frameworks** (Spark, Kubernetes, EMR), **performance optimization** (+40% throughput gains), and **large-scale data pipelines** on Linux. Proficient in C++, Python, Go, Bash, with background in HPC/ML workloads and cloud infrastructure (AWS, Docker).

## TECHNICAL SKILLS

- **Languages:** C++, C, Python, Go, Bash, Scala, JavaScript/TypeScript, Java, SQL
- **Systems & Parallel Computing:** Linux System Programming, Async/Parallel Programming (asyncio, multithreading), Network Protocols (TCP/IP, BACnet/IP), IPC, Performance Tuning, gRPC
- **HPC/AI/ML:** Apache Spark (PySpark/Scala), Distributed Computing (Kubernetes, EMR), GPU Concepts, NLP/NER Pipelines, Transformers, MLflow
- **Cloud & Infrastructure:** AWS (EKS, EMR, ECS Fargate, MSK, S3), Docker, Kubernetes, Terraform, Kafka, CI/CD Pipelines
- **Data & Observability:** PostgreSQL, MongoDB, Redis, Prometheus, Grafana, Distributed Tracing, CloudWatch

## WORK EXPERIENCE

### BAS Software Developer

Florida State University

Nov 2024 – Present  
Tallahassee, FL

- Engineered **asynchronous parallel network scanning system** using Python asyncio to scan 172+ networks simultaneously; processed 35k+ devices, discovered 3,500+ new endpoints, reducing manual discovery by 85% with 99.2% accuracy.
- Developed **Linux-based system services** for building automation device management; built custom tooling for Oracle DBMS operations and BACnet/IP protocol integration across 15+ engineering teams.
- Designed **CI/CD automation pipelines** for GitHub workflows; automated code validation and deployment across dev/stage/prod environments, reducing deployment time by 70%.

### Machine Learning Researcher

Prof. Olmo Zavala Romero — FSU

Jan 2023 – Aug 2024  
Tallahassee, FL

- Built optimized **Spark (Scala/PySpark) distributed compute jobs** on Kubernetes/EMR clusters; implemented shuffle and partitioning optimization achieving +40% throughput and 99% job success rate over 1TB+ datasets.
- Architected **parallel data processing pipelines** with windowed aggregations on distributed infrastructure; reduced pipeline runtime by 50% through async batch optimization and compute resource tuning.
- Implemented **NLP/ML pipelines** with Transformers and vector embeddings for semantic analysis; deployed monitoring via Grafana/MLflow with automated performance drift detection.

### Software Analyst

Aspire Systems

Oct 2020 – Jul 2022  
Chennai, India

- Led **monolith-to-microservices migration on AWS EKS**, architecting event-driven services with Linux containers; improved system availability to 99.5%, reduced costs by 20%, enhanced deployment frequency 5x.
- Developed **ETL pipelines with parallel processing** on Linux environments; boosted data throughput by 35% and reduced data quality issues by 80% through automated validation frameworks.

## PROJECTS

- **Streaming Data Platform (Kafka/Spark) GitHub** — Built **real-time distributed data pipeline** using Apache Kafka and Spark Streaming on AWS (MSK, EMR). Implemented **parallel consumer groups** with windowed aggregations, processing 10k+ events/sec with sub-second latency. Deployed on Kubernetes with auto-scaling. Tech: Scala, Python, Kafka, Spark, AWS, Docker.
- **Network Discovery Platform GitHub** — Developed **async network scanning system** for automated device discovery across enterprise networks. Implemented **concurrent TCP/IP scanning**, BACnet/IP protocol handling, and **multithreaded device interrogation**. Built REST API with **WebSocket real-time updates**. Tech: Python, asyncio, FastAPI, PostgreSQL, Linux.
- **Financial Data Pipeline (NLP/Systems) HuggingFace** — High-throughput data extraction platform using **NLP pipelines** and vector indexing for semantic search. Processes 1000+ documents with 95% accuracy; optimized for **batch parallel processing**. Tech: Python, spaCy/Transformers, Qdrant, FastAPI.

## EDUCATION

### Florida State University

M.S. in Computer Science

Aug 2022 – May 2024  
Tallahassee, FL

- **Relevant Coursework:** Data Communications, Advanced Database Systems, Cryptography, Data Mining

### SRM Institute of Science & Technology

B.Tech. in Computer Science

Aug 2016 – May 2020  
Chennai, India

## PUBLICATIONS & CERTIFICATIONS

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- Review Classification & False Feedback Detection (IJAST) | AWS Solutions Architect (Udemy, 2024)