

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 **Web-Socket** 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

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