Murali Venkateswara Gopi Krishna Ponnada

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EDUCATION

Binghamton University, SUNY, Thomas J. Watson College of Engineering & Applied Science — **Binghamton, NY**
MS in Computer Science | CGPA : 3.8/4.0 — ***Aug 2022-May 2024***

Chaitanya Bharathi Institute of Technology (A), Osmania University — **Hyderabad, India**
Bachelors of Engineering in Electronics and Communication Engineering — ***Aug 2015-May 2019***

TECHNICAL SKILLS

Languages & Frameworks: Python, JavaScript, TypeScript, Java, C++, Angular, Flask, Django, Node.js, Express.js, React, MATLAB
ML/AI & NLP: YOLOv8, NLTK, scikit-learn, Jupyter, pandas, numpy, Gensim (Word2Vec, Doc2Vec, TF-IDF, Cosine-similarity)
Databases: Oracle, MySQL, MongoDB, CassandraDB
Systems, Tools & Concepts: Quartz, AMPS, Kafka, Elasticsearch, Splunk, Grafana, Kibana, Docker, Git, Postman, Selenium, Jira, Distributed Systems, Large-Scale System Design, Microservices, REST APIs, Concurrency, Messaging Systems, CI/CD, Agile, Data Structures & Algorithms

WORK EXPERIENCE

Bank Of America (Contract) | Software Engineer | New York, NY — ***Oct 2024-Present***
Equities Derivatives Trading Platform (RAM EQTRADES - FRONT OFFICE)

- Built the Astrid Rester API for real-time trade position data across downstream consumers, using parallel processing and caching to handle high volume of requests with low latency, reducing database calls to maintain accuracy under load and protect P&L and dividend workflows.
- Led design and launched a new Financial Regulatory Reporting flow within the existing legacy flow handling instruments, transactions, and position data downstream, improving data handling, regulatory compliance, and without SLA breaches during critical incidents.
- Developed solutions handling ~1M trades/day with <1% error rate, leveraging concurrency and Quartz scheduling for sub-second latencies and implementing code reviews, unit testing, and CI/CD to improve production stability
- Migrated multiple AMPS servers to improve latency by 10% and boosting reliability by 12% in critical trading workflows and refactored codebase, conducted design reviews with peers to evaluate and select optimal technical approaches delivering near real-time trade processing under peak load.
- Partnered with product owners, stakeholders, and cross-functional teams to define deliverables, and deliver enhancements on time. Documented all designed APIs and trading workflows on Confluence/Wiki, enabling faster onboarding & reducing knowledge silos across teams.
- Implemented data-driven observability via Grafana, Kibana, and Splunk, cutting production incidents by 8% and enabling faster root-cause analysis across hardware, network, service, and trade validation issues.

Binghamton University | Research Associate | Binghamton, NY — ***Jul 2024-Oct 2024***
Brain Aging Study - Neuroimaging Data Analysis

- Enhanced MATLAB code to process and transform raw brain scan sequences from 54 subjects into blood flow heatmaps, enabling quantitative comparison of flow concentration patterns across age groups and demographic factors.
- Compared cerebral blood flow patterns across subjects segmented by age and other factors, surfacing statistically meaningful insights on neural aging dynamics for published research.

Infosys | Senior Systems Engineer | Hyderabad, India — ***Dec 2019-Aug 2022***
Regulatory Reporting Application (CIRRUS - MIDDLE OFFICE)

- Improved trade processing and reporting for Bank of America, end-of-day risk systems on the QUARTZ platform, optimizing functionalities for accurate trade processing, resolving issues associated with currency conversions, FX trades, and trade record masking.
- Enhanced valuations processing and event-type generation logic, improving exposure reporting accuracy by 20%, reducing errors by ~30%, increasing transaction reporting accuracy by 10%, and resolving an issue affecting ~100k daily trades for uncollateralized reporting.
- Implemented comprehensive error handling and diagnostics framework, ensuring compliance with CFTC, MiFID, HKMA, SEC, ASIC, and EMIR regulatory standards across FX, EQ, IR, and CR asset classes.
- Triaged and resolved complex system issues affecting daily end-of-day risk processing, serving as the Level 3 (L3) escalation point for production incidents; analyzed sources of issues and traced impact across hardware, network, and service operations.
- Contributed to business proposals by evaluating regulatory impact across asset classes, collaborating with stakeholders on requirements and deliverables; participated in design reviews providing feedback on code accuracy.

PROJECT EXPERIENCE

Spotted Lanternfly Detection | Cornell University Hackathon

- Trained a computer vision model within a 12-hour hackathon window to detect spotted lantern flies and egg masses from consumer drone video feeds using YOLOv8 with custom tuned detection thresholds. Iterated rapidly across model variants and reinforcement learning experiments to maximize detection coverage for an invasive pest with high visual variability across life stages affecting vineyard/orchard environments.
- Coordinated field data collection with government officials and researchers across multiple universities and validated model performance against real-world drone footage to ensure practical deployment readiness and generalization beyond training distribution.

Blood Bank Management System | Binghamton University

- Designed and deployed a scalable cloud system on AWS (Lambda, DynamoDB, S3, API Gateway) with a React/Node.js frontend and implemented role-based access, automated inventory tracking, and reduced manual errors in blood request workflows.

Analysis of Health Reddit Data | Binghamton University

- Conducted data analysis on health-related data from Reddit using Python, Matplotlib, and MongoDB. Implemented sentiment analysis and topic modeling for discussions on the platform, revealing insights into user engagement and sentiment trends

Healthcare Voice Navigation App | Infosys

- Built voice-assisted navigation for physically handicapped patients and a caregiver proxy interface within a Django/MySQL healthcare application, applying accessible design principles across multiple user personas.