**Raghu Medarametla**

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**WORK EXPERIENCE**

**Cira Tek Inc. Sep. 2024 – Present**

*Software Engineer Dallas, TX*

* Engineered **RESTful microservices** (Spring Boot + Kafka) to process credit data, leveraging multi-threaded message consumers to reduce trade monitoring latency from 500ms to 300ms.
* Developed and consumed REST APIs for inter-service communication; currently exploring gRPC-based services to improve latency and cross-language communication between microservices.
* Refactored real-time data pipelines (MyBatis + Oracle PL/PgSQL), **cutting query runtime by 35%** and enabling ~20% more transactions/hour in risk analysis.
* **Reduced API response time by 75%** by integrating Redis caching and refactoring complex PostgreSQL joins, improving portfolio risk dashboard performance.
* Led testing initiatives using **JUnit and Mockito**, resulting in a 30% reduction in post-release by collaborating with product owners and QA teams in agile sprints
* Engineered compliance and risk monitoring services that processed real-time credit and trade data, simulating financial exposure evaluation understanding for market-risk engines.
  + **Stack:** React.js, Redux, Spring Boot, GraphQL, MyBatis, Redis.

**Oklahoma State University Aug. 2023 – May. 2024**

*Graduate Research Assistant*  *Stillwater, OK*

* Engineered an interactive website for the Department of Integrative Biology using ColdFusion and PHP, leading to a 20% reduction in data processing time.
* **Optimized SQL, PL/SQL queries** to reduce data reload time by 30% and build interactive modules for grade evaluations and student reporting.
* Integrated **RabbitMQ** to decouple grade evaluation from reporting systems, improving responsiveness.
  + **Stack:** Spring Boot, Angular, SQL/PLSQL.

**Tata Communications Jul. 2021 – Aug. 2022**

*Software Development Engineer Remote*

* Collaborated with a team to **build custom Kubernetes controllers** using **Python, Operator-SDK**, automating the provisioning of 2,000+ clusters per quarter and reducing manual setup by 85%.
* **Automated deployment** of big data stacks (Spark, Hadoop, Presto) using Helm & Ansible, boosting cluster readiness speed and DevOps productivity.
* **Deployed AWS services** (S3, RDS, Beanstalk, DynamoDB) and **set up CloudWatch monitoring** to proactively detect issues, reducing downtime incidents by 40%.
* Provisioned scalable AWS infrastructure using **Terraform scripts**, reducing environment spin-up time by 85%.
* Built and maintained CI/CD pipelines using Jenkins; currently adapting pipelines for GitLab CI with YAML-based workflows to align with newer DevOps toolchains.
* **Provisioned a bare metal OpenStack setup** to provide cloud-like VM access for our team’s development and infrastructure tasks.
  + **Stack:** Python, Kubernetes, AWS, Terraform, Helm, Docker, Ansible, OpenStack.

**Cognizant Jan. 2021 – Jun. 2021**

*Programmer Analyst Chennai, TN*

* Assisted in developing web services with **geolocation using WebSockets**, improving live tracking efficiency by 15%.
* Designed personalized push notifications via Spring backend services to boost app usability by 20%
* Supported database optimization efforts by fine-tuning **Hibernate queries**, reducing query load and enhancing performance under high traffic in Agile Environment.
  + **Stack:** Spring Boot, WebSockets, Hibernate, SQL.

**EDUCATION**

**Oklahoma State University May 2024**

*Master of Science, Computer Science Stillwater, OK*

* **GPA: 3.8/4.0**
* **Coursework:** Data Structures and Algorithms, Computer Architecture, Operating Systems, Software Engineering, Machine Learning.

**SASTRA University June 2021**

*Bachelor of Technology, Computer Science Thanjavur, TN*

**CERTIFICATIONS, SKILLS**

* **Certifications:** Certified Kubernetes Administrator, Tableau Desktop Specialist
* **Skills:** Java, Python, JavaScript, J2EE, Spring Boot, React JS, PostgreSQL, Neo4j, Git, Agile, Jenkins.

**PROJECTS**

**Systematic Adaptive Traffic Routing with Service Mesh |** [GitHub](https://github.com/RaghuM7/Istio-ServiceMesh) **May 2024**

* **Contributed to Open Source** microservices-based traffic routing system using Istio and Envoy to reduce service bottlenecks during peak traffic. Enabled adaptive routing based on user behavior, improving request flow stability and reducing latency spikes in load tests by 25%.
* Implemented request-level tracing using Prometheus and Grafana; currently extending observability stack with Open Telemetry to support end-to-end latency tracking in microservices.
  + **Stack:** Istio, Envoy Proxy, Python, Shell Scripts, Prometheus, Grafana.

**Blockchain Transaction Optimization Model |** [GitHub](https://github.com/RaghuM7/COA_Codes) **Dec 2023**

* Designed a queue optimization model to improve transaction throughput in blockchain systems under high load. Used Markov-based logic to prioritize transactions by system state instead of simple FIFO. Simulated performance using MATLAB and demonstrated a 25% reduction in wait time.
  + **Stack:** MATLAB, Blockchain Simulation, Queueing Theory.

**NFT Analysis Algorithm |** [GitHub](https://github.com/RaghuM7/NFT-Analysis) **May 2023**

* Created a graph-based analysis tool to detect abnormal trading behavior in NFT transactions, which flagged 50+ instances of suspicious activity in test datasets and helped visualize buyer-seller clusters for audit purposes.
  + **Stack:** Java, Graph Algorithms, File I/O, Visualization Tools.

**Pharmacy Management System|** [GitHub](https://github.com/RaghuM7/Pharmacy-System) **Dec 2022**

* Developed a secure web application for pharmacies to handle prescription uploads, order tracking, and inventory updates in real-time, reducing manual record-keeping by 40% and improving order accuracy.
  + **Stack:** Spring Boot, Angular, MyBatis, Oracle PL/SQL, HTML/CSS