

Karthik Chandran Lakshmanasamy

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EXPERIENCE

Principal Software Engineer in Test

MicroStrategy, Tysons, VA

May 2023 – Present

- Developed a backend automation framework using **WebdriverIO**, reducing testing time and improving code coverage.
- Implemented **AI-driven and predictive testing** methodologies using **TensorFlow** to validate the **Retrieval-Augmented Generation (RAG)** feature, enhancing conversational AI accuracy for forecast-related queries.
- Automated pre and post-deployment microservice checks using **AWS CodeBuild**, ensuring **AI and SQL Engine** functionality in distributed systems.
- Designed a **Jenkins workflow** to integrate automated tests into the **CI/CD pipeline**, minimizing regressions in deployments.
- Developed a framework to validate the **Universal Semantic Layer** between MicroStrategy and Tableau ensuring SQL accuracy.
- Built a Python-based framework to test **concurrency** in event-driven data models, identifying **performance bottlenecks**.
- Led and mentored junior engineers, providing guidance on automation strategies and tooling selection, resulting in 90% test coverage across critical components.

Senior Software Engineer in Test

MicroStrategy, Poland

Jul 2019 – May 2023

- Designed an automated framework using **Protractor, JavaScript, and Cucumber**, cutting manual testing effort for the SAP S/4 Connector, Cloud based application and services.
- Enhanced **Kafka-Flink data stream** performance by 38% by optimizing batch size and processing intervals.
- Played a key role in the certification and release process for **ADLS, S3, and GCS Cloud connectors** in MicroStrategy 2021.
- Led **FedRAMP certification** for the Cloudera **Kubernetes platform**, ensuring compliance with **federal security standards**.
- Built a **Data pipeline** to analyze server logs, providing critical insights into performance metrics for system optimization of backend services.

Software Engineer in Test

MicroStrategy, Tysons, VA

Mar 2018 – Jul 2019

- Designed a framework using **Pytest and Selenium** to detect Google BigQuery **data import issues**, enhancing data connectivity.
- Streamlined **CI/CD workflows** by collaborating with **DevOps** to integrate automated tests into pipelines, ensuring seamless deployments and improved release reliability.
- Managed the planning, integration and testing of the **Google BigQuery connector** in MicroStrategy through continuous testing.
- Led the migration from **Teradata** to Google BigQuery, collaborating with cross-functional teams to optimize migration and data accessibility.

Associate Software Engineer in Test

MicroStrategy, Tysons, VA

Mar 2017 – Mar 2018

- Designed a performance testing framework to measure performance of all the big data connectors in MicroStrategy.
- Improved Performance by utilizing **Google storage API** for large scale data import and decreased response time by 44%.
- Lead **Continuous improvement** initiatives to enhance test efficiency, reduce flakiness, and improve defect detection.
- Collaborated with cross-functional teams to define, review, and prioritize requirements and features.
- Implemented and validated **Kerberos authentication** for **Cloudera Data Platform** using Active Directory, enhancing security.

EDUCATION

Master of Science in Computer Science | Texas State University

Aug 2013 – May 2016

Bachelor of Engineering in Computer Science | Anna University

Sep 2009 – May 2013

TECHNICAL SKILLS

- **Languages:** Python, JavaScript, Typescript, Java, Bash, Groovy, C++.
- **Databases/Cloud:** BigQuery, Databricks, Snowflake, Oracle, MySQL, MongoDB, PostgreSQL, Redshift, GCP, AWS, Azure, Redis.
- **Frameworks:** WebdriverIO, Selenium, Playwright, Cypress, Kafka, Node.js, Cucumber, Pytest, JUnit, TestNG, JMeter, Gatling.
- **Tools:** Kubernetes, AWS CodeBuild, Docker, Ansible, Git, Jenkins, Postman, Swagger, Terraform.
- **Machine Learning:** TensorFlow, Pandas, NumPy, Linear Regression models.
- **AI/LLM:** Generative AI, Azure Embedding models, Lang Chain.
- **BI/CRM:** MicroStrategy, Tableau, Qlik, Salesforce, ServiceNow, Power BI.