Omkar Katkade

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EDUCATION

- **University of Maryland, Baltimore County, MD**   **August 2021 - May 2023**
  Masters in Data Science   *GPA: 3.9/4.0*
- **Terna Engineering College, Mumbai University, India**   **June 2014 - June 2018**
  Bachelor of Engineering in Computer Science   *GPA: 3.4/4.0*

SKILLS

Programming Languages: Java, Python, Typescript, JavaScript, C, C#, Ruby, GoLang Web
Web Technologies: Angular, Spring Boot, Node.js, CSS, HTML, Postman, Flask REST APIs, RESTful API, React, JWT, Django, Swagger, Postman
Testing Frameworks: Junit, Jest, Mockito, Jasmine, PyTests, PyUnit, Selenium, Testify, BDD, TDD
Database Management: PostgreSQL, MySQL, Microsoft SQL Server, PL/SQL, MongoDB, Oracle
DevOps: Docker, GitLab, Git, Jenkins, Maven, Kubernetes, Portainer, IntelliJ, Artifactory, JFrog, Vault, Kong, Konga
Networking Technologies: Routing Protocols (BGP, OSPF, RIP), TCP/IP, HTTP, DNS, FTP, LAN/WAN/SD-WAN, OAuth2, JWT
Operating Systems: Windows, Linux (Red Hat, Ubuntu), Unix, Shell Scripting, command-line operations
Big Data/Cloud Technologies: PowerBI, Tableau, Kibana, AWS- EC2, S3, Glacier, Lambda, Kafka, Apache Spark, Hadoop, Elasticsearch
Tools/Packages/IDE: MySQL, Eclipse, Docker, JMeter, Git, Jenkins, Maven, Visual Studio, JIRA, Bitbucket, Portainer, IntelliJ, Artifactory, JFrog, Vault

WORK EXPERIENCE

- **Software Developer II (Full-Stack)** / **CRST The Transportation Solution** / **USA.**   **May 2022 – Present**
  - *Developed and deployed a comprehensive web application that streamlines nearly all key operations in trucking and transportation management. This solution supports everything from creating orders for transporting loads to assigning tractors, drivers, and trailers (individually or in combinations), tracking real-time status and location of orders, and facilitating direct messaging with drivers. Additionally, the platform integrates various other features to ensure seamless, efficient, and transparent management of logistics processes—and more.*
  - Deployed a **Full Stack solution using Java, Angular, Spring MVC, and Spring Boot**, resulting in a **25% rise in user engagement**. Integrated UI components, Lazy Loading, and Microservices for optimal efficiency.
  - **Architected and developed Spring Boot microservices** and **numerous APIs** to efficiently manage complex business operations, enhancing modularity and scalability. Elevated frontend performance by **30%** using **Lazy Loading, NgRx, and Code Refactoring**.
  - Led data service integrations using **Kafka, RabbitMQ, and Elasticsearch, leveraging Kafka Streams and Connect APIs** for real-time, cross-platform data synchronization. Enhanced application scalability and performance with RESTful APIs, Spring AOP, and Spring Boot, achieving a 40% efficiency gain through optimized **SQL and MySQL database** design, demonstrating advanced system design capabilities.
  - Designed and implemented a **recommendation system** using algorithms like **Levenshtein** distance to suggest optimal matches, reducing customer task time from **~10 minutes to a few seconds** and significantly enhancing user experience and efficiency.
  - Wrote **complex SQL queries** for efficient data retrieval and processing, along with database stored procedures to manage and optimize various business operations, ensuring efficient data handling and processing.
  - Enhanced web application quality through **automated testing with Selenium WebDriver.** Developed comprehensive test scripts to ensure functionality, usability, and performance across all features. This resulted in a ~**60%** in defect detection and reduced manual testing efforts.
  - Delivered business-critical features within tight deadlines, exceeding client expectations and contributing to essential project milestones.
  - Deployed applications using **Docker** and orchestrated services with **Kubernetes and Portainer**, enabling dynamic scaling and load balancing, which improved application availability and performance.
  - Developed and managed **CI/CD pipelines** using **Jenkins**, enabling automated testing and deployment, which reduced deployment time by **30%**
  - **Integrated Selenium with CI/CD pipelines** to ensure automated testing as part of the deployment process
  - Employed **Ansible** for configuration management, ensuring consistent server configurations across development, staging, and production environments
  - Configured **load balancing** strategies within **Kong**, to distribute incoming traffic across multiple instances, improving fault tolerance and ensuring high availability
  - Managed **Docker containers** to ensure application health and stability, optimizing performance and streamlining deployment processes.
  - Implemented **Spring Boot Admin** (SBA) for monitoring the **health and performance of microservices**, **enabling real-time metrics, health checks, and log viewing** to enhance application visibility and troubleshooting capabilities
  - Developed **Python and Bash scripts** for automating deployment processes, routine maintenance tasks, and monitoring, significantly reducing manual workload and enhancing operational efficiency.
  - Performed **system troubleshooting**, log management, and **network configuration in Linux/Unix-based** environments for optimized performance and scalability.
  - **Managed a cross-functional team of developers, testers, and business analysts** on an internal project, successfully delivering major milestones on time and aligning outcomes with business goals.
  - Collaborated with business stakeholders to gather requirements and document them as user stories, tasks, and bugs on the JIRA board, ensuring alignment between technical solutions and business needs.
  - Conducted regular **thorough code reviews** for peers, providing constructive feedback and suggestions for improvement to uphold code quality, enhance maintainability, and promote best practices.
  - Mentored interns, addressed production issues promptly, exceeded KPIs with strategic designs. Advocated for code excellence and team collaboration through GIT, Maven, Postman, Swagger, JIRA, and Confluence within Agile environments.

- **Full-Stack Software Developer (Full-Stack)** / **CARDS Lab** / **USA.**   **August 2021 – May 2022**
  - *Pioneered an Event-Driven Web Application for real-time battlefield and network autonomy event monitoring, a strategic Army Research Lab (ARL)-funded project*, utilizing technologies like Python, Flask, Django, Java, ElasticSearch, Logstach, Kibana, RabbitMQ, and Spring Boot.
  - Leveraged advanced analytics tools, namely **Elasticsearch, Kibana**, PowerBI, and Tableau, to provide sophisticated visualization and derive actionable insights from both real-time and archived event datasets.
  - Engineered high-performance **RESTful APIs using Django REST Framework, Flask-RESTful, and Spring Boot**, facilitating a robust bridge between intricate **Java, Angular, and JavaScript front-end and back-end ecosystems**.

- Augmented application responsiveness by adeptly integrating caching tools like Redis and Memcached, further highlighting proficiency by devising a high-throughput broker service for real time event assimilation.
- Directed the **end-to-end lifecycle of the UI application and managed AWS EC2 instances**, demonstrating profound Full Stack acumen with tools such as **PostgreSQL, ELK stack, and Kafka**.
- Championed quality and precision through robust testing methodologies, incorporating JUnit, Jasmine, and Pytest, while fostering a culture of collaboration with cross-functional research teams to manifest scalable software solutions.

- **Software Developer (Full-Stack)** / Tata Consultancy Services / India.   **June 2018 - July 2021**
  - *Contributed to the TCS Global Employee Self Service (GESS) application, a platform supporting HR and finance functions for over 300,000 TCS employees. Developed and optimized web modules for leave management, travel, claims, advances, and forex, delivering a user-friendly experience that enhanced accessibility and efficiency across essential services for a large-scale user base.*
  - Overhauled the legacy JSF application, utilizing Angular 10 and Spring Boot (microservices), resulting in a 40% surge in performance and user responsiveness.
  - Spearheaded the creation of scalable Spring Boot APIs, employing advanced System Design, Junit and Jasmine, while achieving 100% unit test coverage and enhancing backend efficiency.
  - **Automated CI/CD processes using Jenkins and GitLab CI**, enabling continuous integration and delivery practices that improved code quality and deployment speed.
  - **Developed monitoring and alerting solutions** to ensure application uptime and performance, using **Nagios and Grafana**.
  - Formulated optimized PostgreSQL and MySQL database schemas, integrating Redis, Memecache, and best practices in SQL for streamlined data storage and rapid retrieval.
  - Elevated code quality **through rigorous reviews**, leveraging GIT, GitHub, SVN, and Jenkins, resulting in a 25% boost in consistent coding practices and team collaboration.
  - **Trained a team of 5-6 members** on best software development practices, emphasizing principles of Object-Oriented Programming (OOP) to enhance their coding skills and promote code quality
  - **Automated manual Jenkins build triggers** by developing a streamlined script that enabled one-click execution of all required builds, significantly reducing the time and effort involved in the build process.
  - Devised an intuitive dashboard harnessing Data Visualization tool (Tableau), catering to a vast user base, and reinforcing the application's front-end capabilities using JavaScript, TypeScript, and CSS.

ACADEMIC PROJECTS

- **Chatbot for Exploratory Data Analysis (EDA)**   **Python, DialogFlow, Django, Heroku, Flask**
  - Developed an EDA Chatbot using Machine Learning and NLP with Python, Django, and DialogFlow, achieving seamless Data Analysis interactions.
  - Achieved 97% command interpretation accuracy, streamlining user-command processing through optimized API design.
  - Deployed the solution on Heroku and established rigorous testing via Pytest to ensure scalability and reliability.

- **Capital BikeShare Analysis and Modelling**   **Python 3, Sklearn, Pandas, Numpy, Seaborn, Matplotlib, EDA**
  - Performed analysis on the data to understand patterns in user behavior and prediction
  - Analyzed impact of weather on user behavior and business. Created intuitive visualization using Tableau for providing business insights
  - Built a Decision tree which classified types of users (Casual or Registered) with 85% accuracy.

- **Speech Recognition with AI**   **Python 3, Pyglet, Ptts3, Selenium-Webdriver, Speech-to-Text, Web Scraping, BeautifulSoup**
  - Spearheaded a speech recognition solution utilizing Python and Speech-To-Text library, effectively transforming spoken language into written format.
  - Innovated a complex web-scraping module using Selenium-webdriver and BeautifulSoup, addressing the intricate challenges associated with data extraction.
  - Integrated advanced audio functionalities through Pyglet and Ptts3, enhancing the system's responsiveness and user interaction capabilities in the realm of AI-driven speech recognition.

- **Mobile Application for Notifying Leftover Food**   **Android Studio 2.0, PHP, Java, HTML, CSS, Google Maps API, SQL, JavaScript**
  - Devised a mobile application using Android Studio and Java, leveraging the Google Maps API to pinpoint leftover food sources, enhancing outreach to marginalized communities.
  - Crafted an intuitive interface with PHP, HTML, CSS, and Bootstrap, optimizing appeal and accessibility for non-profit stakeholders.
  - Ensured robustness and optimal performance through meticulous JUnit testing, solidifying its standing in Android and Software Development.

- **University Attendance Management System**   **Java, Spring Boot, React**
  - Designed an advanced University Attendance Management System using Java, Spring Boot, Spring JPA, and React, adeptly addressing scalability with Load Balancing techniques.
  - Facilitated seamless user experience for over 500,000 students, underpinned by Docker integrations, Maven builds, and GIT versioning.
  - Resolved high-traffic complexities with strategic load balancing, enhancing system reliability for a pivotal academic tool.