MARASANIGE SAMARTH MAHENDRA

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EDUCATION

Northeastern University **January 2024 - December 2025**
Master's, Computer Science
- Relevant coursework: Programming Design Paradigm, Database Management Systems, Algorithms, Natural Language Processing, Machine Learning, Foundation of Software Engineering, Mobilde App development

Dayananda Sagar College of Engineering **August 2018 - July 2022**
Bachelor's, Computer Science

SKILLS

- **Skills:** Python, Java, JavaScript, TypeScript, Django Restframework, Django, C/C++, PostgreSQL, Redis, NoSQL, Elasticsearch, Data Structures & Algorithms, React.js, Flask, Linux, Celery, Postman, Datadog, AWS, chromaDB, Kubernetes, Docker, Apache Kafka, Terraform, Jenkins, Microsoft Azure, Pytorch, scikit-learn, LLM integration, Data Modeling, NumPy, MongoDB, Pandas, SpaCy, problem-solving, Teamwork, Communication, SQL, microservices, HTML/CSS, GraphQL, Prometheus

PROFESSIONAL EXPERIENCE

Draup **Bengaluru, KA, India**
Associate Software development Engineer *August 2022 - November 2023*
- Oversaw & maintained various platform features like digital tech stack, outsourcing, customers, and university page. (Django Rest Framework)
- Designed and developed an internal framework for dynamic query generation, enhancing real-time data aggregation and boosting chatbot performance by 60%, while reducing new entity development time by 80%.
- Revamped filters, adding the flexibility to change logical operators and incorporate nested filtering options, e.g., "(a and b) or c" enabling complex filtering across platform.
- Authored business logic for over 100+ Rest APIs using Python and Django, ensuring modular design and reusability, which supported various platform functionalities
- Designed and implemented subscription-based access control systems, regulating app access effectively.
- Migrated APIs from Postgres to ElasticSearch for real-time aggregation, resulting in a 5x faster response time.
- Implemented optimization techniques such as partitioning, query restructuring, indexing, and view creation, leading to a 400% improvement in query execution and a 50% reduction in operational costs
- Monitored and maintained platform health using Datadog and AWS CloudWatch, proactively addressing issues to reduce downtime from 4% to 1% and resolving platform issues 75% faster. -- Python, Django Rest Framework, PostgreSQL, ElasticSearch, Redis, Jenkins

Draup **Bengaluru, KA, India**
Associate Software development Engineer Intern *April 2022 - June 2022*
- Monitored and debugged API bugs in Datadog, reducing issue resolution time by 30%
- Implemented caching to improve efficiency of image requests, resulting in a 70% reduction in load times
- Developed and executed automated database cleanup scripts, increasing database efficiency by 25%.

PROJECTS & OUTSIDE EXPERIENCE

Bike Rental System **Boston, MA, USA**
February 2024 - April 2024
- Developed full-stack bike rental system (similar to Blue Bikes) using React.js, Django REST Framework, and MySQL hosted over deployed across multiple platforms (Azure, Digital Ocean, Netlify)
- Implemented caching with Redis and monitoring with Datadog to enhance system performance and scalability.
- Created a secure login system utilizing JWT (JSON Web Token) authentication, allowing users to easily access protected resources.

LinkedIn Assist (LLM powered Bot to Filter Job Postings) **Remote**
- Developed a Chrome extension leveraging Flask for backend on CodeSandbox to filter job postings in LinkedIn using a prompt, improving job search efficiency by automating the filtering process.
- Implemented entity extraction using GPT-3.5 to interpret natural language, with support for complex boolean queries such as AND, OR, NOT similar to boolean modifiers in LinkedIn job search, enhancing search precision and customization.

Open Jobs - Analatics (in progress) **Boston, MA, USA**
Job stats *December 2024 - Present*
- built a distributed system, inspired by Levels.fyi, aggregating 500+ job postings across companies.
- Designed a producer-consumer distributed architecture using Celery, integrated with Prometheus and Grafana, achieving 99.9% uptime and efficient task monitoring.
- Scraped dynamic web pages with Playwright and Puppeteer, harvesting 1000+ data points daily.
- Developed a Python reverse proxy with router port-forwarding, reducing latency by 40%.
- Automated CSS selector extraction using LLMs, processing HTML content in under 2 seconds per page, reducing new company onboarding effort by 90%.
- *Link to project*

Stock Market Simulation Application - Java MVC **Boston, MA, USA**
February 2024 - April 2024
- Developed a Java MVC system managing investment portfolios, integrating a stock API, test coverage, and buy/sell on specified dates.

- Integrated data visualization to plot portfolio performance over time, utilizing bar and line charts for investment growth trends, stock gains/losses analysis, and moving average calculation.

PATENTS

Myocardium Wall Motion and Wall thickness Map : (patent pending) : App-no 202341086278(india) - Co-inventor/author Generated a visual map from cine-series MRI scans to investigate heart wall motion, thickness, thickness difference, fibrosis during systole and diastole phases. Employed custom algorithms to determine myocardium wall thickness and calculated distances in indistinct areas, increasing measurement precision by 50%.Optimized time complexity using numpy and multiprocessing, reducing execution time by factor of 60