KUNAL MEHROTRA

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EDUCATION

Northeastern University, *Boston, MA* — *GPA (3.9/4.0)*
Master of Science in Computer Science — *Sept 2021 – May 2023 (expected)*
Courses: Program Design Paradigms, Database Management Systems, Algorithms, Data Science, Natural Language Processing, Unsupervised Machine Learning, Web Development

SRM Institute of Science and Technology, *Chennai, India* — *GPA (8.7/10)*
Bachelor of Technology – Computer Science and Engineering — *July 2016 – Jun 2020*
Courses: Data Structures, Web Programming, Programming in Java, Operating Systems, Compiler Design

TECHNICAL SKILL SET

Languages:	Java, Python, PHP, C++, JavaScript, TypeScript, R, HTML/CSS.
Databases:	MySQL, OracleSQL, MongoDB, SQLite, AWS RDS, DynamoDB, Apache Cassandra
Frameworks:	SpringBoot, React.js, Node.js, jQuery, Hibernate, Flask, GraphQL, Sklearn, Keras, Git, Junit4.
Tools and Technologies:	REST API, Postman, Docker, Kubernetes, Apache Flink, Kafka, Rockset, AWS S3.

EXPERIENCE

Xcaliber Health, *Boston, USA* — *July 2022 - Present*
Software Development Engineer Intern (SDE)
- Created Enterprise Master Patient Index for indexing patients based on the Electronic Healthcare data by implementing deterministic and probabilistic matchings using NIST tokenization algorithms. Generated hash as Vaultless tokens and validated using checksum techniques achieving 95% precision in matching patient records and removing redundant data.
- Worked extensively with RESTful web services and OAuth to integrate Xcal platform and client organizations, used various data formats (JSON, XML) to provide an interface to third-party applications, created new features leveraging MVC pattern using Node.js run time.
- Designed and developed Javascript SDKs with entire microservice data pipeline for ingesting Workforce data into Kafka cluster using Apache Flink to process data streams used to deploy new APIs as part of their job, thereby improving application performance by 30%.
- Achieved 90%-unit test coverage using Junit and Jest frameworks on EMPI and Xcal API integration platform.

Khoury College Of Computer Sciences, *Boston, USA* — *May 2022 - July 2022*
***Teaching Assistant* - Course CS 3500 (Object Oriented Design)**
- Assisted Professor Amit Shesh by holding Office Hours, developing course content on Image Processing and MVC architecture design, conducting recitations and tutoring 350 students, helping them implement best coding practices thus lowering dropout rates by 8%.

Tata Consultancy Services, *Mumbai, India* — *Oct 2020 - July 2021*
Systems Engineer
- Programmed and designed a highly scalable client Banking web application using React and Java Spring Boot thus delivering high performance, and the ability to handle large volumes of traffic data.
- Customized a hierarchical SQL server schema by identifying performance improvements to database procedures, data profiling and optimizing database queries, for fast data retrieval, providing a solution that guaranteed recovery performance and high availability using MySQL and Unix.
- Performed system monitoring and automation for ING bank, Netherlands by providing System checks for backend Linux RHEL servers, writing Server-side scripts for daemon allocation, handling critical files and component configurations, infrastructure automation with Terraform, and deploying ansible playbooks from Jenkins pipelines, version upgrades, and patching of servers for ION products Anvil and Arc.

Acme In Tech, *Lucknow, India* — *April 2020 - Sept 2020*
Full Stack Engineer
- Increased Revenue by 30% by reducing dependency and saving the commission given to freelancing platforms by leading and developing a Marketplace E-commerce platform for freelancers in a three-tier architecture model using MySQL, PHP, Laravel in the backend and WordPress, Bootstrap, and jQuery in the frontend.
- Improved reliability**,** server response time and throughput by distributing traffic across servers by using Amazon's EC2 instances, auto-scaling, and Load Balancers by 20%.

PROJECTS

The Dungeon Maze Game
- Created a Graphical User Interface game in Java using the MVC architecture, keeping three components independent. Implemented using Swing framework which used DFS to find the optimal path between start and end nodes.
- Implemented Factory Design Pattern using Interfaces, abstract classes, enums enabling to add new features using Solid principles.
- Unit Testing was done via JUnit4 through test-driven development.

Arogya
- Built a fitness android app using Kotlin, all the user form Sign up, profile, and history sections were made using Node.js and MongoDB to provide information about the calorific value of food from its image.
- Uploaded these images using Firebase to the REST API which in turn passed it to the model having a Convolutional Neural Network built using Keras and Flask that had an accuracy of 89.66%.

Save.ai
- Developed an anti-cyberbullying app that protected users by identifying malicious attacks on Twitter and Facebook.
  The model was based on sentiment analysis, which would mark the post/tweet as a red flag above a certain set threshold. Built using jQuery, JavaScript for frontend, Python, TensorFlow for model, and Flask for deployment.

ACHIEVEMENTS

- SRM University Gold Medal recipient for research paper on Optimization of Neural Networks using Deep Genetic Network Algorithm.
- Team Lead in the Satellite Research Lab for the domain On Board Computer Systems in the mission to send cube satellites to the Moon carried out by students under the supervision of ISRO scientists.