MOMIN NASEEM

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PROFESSIONAL EXPERIENCE

Project Human City – Backend Developer *December 2022 – Present*

- Deployed Apollo Server to Google Cloud Functions for efficient database management, reducing latency by 30%.
- Designed a scalable and efficient database schema to store user data and sensitive information in GraphQL, resulting in faster query processing.
- Wrote optimized NodeJS code and tests, built prototypes, resolved complex issues, and profiled and analyzed bottlenecks for improved performance.
- Managed and optimized distributed systems in Google Cloud to ensure high availability and reliability.
- Designed and developed robust REST APIs to support mobile and desktop clients, enabling seamless communication between devices.

University of Toronto Capital Management – Web Developer; Mississauga, Canada *September 2022 – Present*

- Improved website functionality and performance by implementing WYSIWYG tools, resulting in a 20% increase in user engagement.
- Created JavaScript and HTML-based web pages from mockups, ensuring pixel-perfect implementation of design.
- Ensured website security and stability by implementing stringent testing protocols and troubleshooting user issues.
- Tested websites and performed user testing and troubleshooting prior to deployment.

eWorx – Software Developer intern *June 2022 – December 2022*

- Collaborated with multiple teams to develop an automated grading system, reducing grading time by 50%.
- Improved the performance of existing React JS and Django codebase by conducting code reviews and optimizing application by 25%.
- Enhanced application features by working on the Django backend and implementing user-friendly interfaces with Figma.
- Conducted in-depth testing to eliminate vulnerabilities and bugs in ReactJS front-end by 30%, ensuring a stable and efficient application.
- Liaised with the client to add and change platform functionality to fit the needs.

Weerv – Software Developer *June 2022 – September 2022*

- Automated manual queries by using REST API Integrations in Python, reducing manual product lookup by 80%.
- Reduced manual data cleanup by extracting key data from an SQL database and automating data cleanup using the Pandas library, resulting in a 20% increase in data accuracy.
- Reduced manual data cleanup by extracting key data from inventory database and automated data cleanup using the Pandas library.
- Accomplished automated product price analysis to increase product sales by 10%, improving business performance.

myLaminin – Software Tester *July 2022 – August 2022*

- Reduced testing time by 50% by developing automation scripts for qualifying cases and regression testing, ensuring a faster and more efficient testing process.
- Conducted black-box testing of VueJS front-end to reduce bugs by 20%, resulting in a more stable and reliable application.
- Developed a strategy and structured plan for the development of automated tests, ensuring comprehensive test coverage and minimizing errors.
- Documented tests and structured them for easy maintenance and optimization by the IT team.

University of Toronto Mississauga – Engineering Design Lead; Mississauga, Canada *April 2022 – September 2022*

- Provided expert guidance and resolved software/hardware issues regarding LAN for "zone" speaker design project.
- Conducted extensive research on sound system design and provided valuable insights to maximize design value given the parameters of the space.
- Provided methods to maximize design value given the parameters of the space.

- Reviewed architectural drawings and diagrammed the speaker, cable, and control system based on the architectural drawing, ensuring adherence to project requirements.
- Drafted an installation document that outlined tasks and sequence of installation and liaised with the project manager on the installation with UTM system administrators and IT department.

PROJECTS

Personal Website | *2023*
- Implemented a static website using JavaScript.
- Added user interactive 3D animations using JavaScript libraries.
- Enhanced user experience using CSS and JavaScript animations.
- Improved website performance using bundling and lazy loading with webpack.
- Upgraded the existing codebase to TypeScript.
- Developed a robust back-end system that enabled the seamless integration of new features and ensured compatibility with multiple browsers and devices.

Unix Shell | *2022*
- Implemented low-level bash-like shell in C.
- Wrote various built-in commands with functionality mimicking bash.
- Implemented features such as environment variables, piping, and file streams.
- Implemented TCP client and server communication to facilitate remote command execution.
- Facilitated the use of POSIX standards to build cross-platform functionality.

Scalable database algorithms | *2022*
- Implemented database join and partitioning algorithms to join sizable databases in parallel.
- Utilized performance profiling to determine and use the best performing approach.
- Improved scalability of database joins by 5x using the OpenMP API.
- Achieved higher scalability by utilizing multiple computers using the MPI library.

Image classification and Natural Language Processing | *2022*
- Implemented KNN, Bernoulli Naïve Bayes and Multi-layer Perceptron algorithms to model text and classify images.
- Created and processed training data to train and validate the ML models.
- Utilized performance profiling to tune various hyper-parameters of the models.
- Achieved classification accuracy of 80% on untrained data by using k-fold cross-validation.

CUDA Image processing | *2022*
- Implemented various kernels to perform image processing with different filters.
- Utilized CUDA C++ API to parallelize the algorithms.
- Performed performance profiling to analyze different algorithms and optimize them.
- Achieved 10x faster image processing using GPU acceleration.

Game Store | *2021*
- Utilized a Java back-end and front-end to create a video game store.
- Created support for user account management and transactions.
- Deployed a flat-file database for keeping user and account history.
- Developed a front-end GUI with Java Swing.

Doodle Jump | *2021*
- Implemented a platform game using MIPS assembly.
- Achieved working keyboard intercepts and driving.
- Implemented driving a bitmap display with complete graphics.

Text and Image Compression Software Suite | *2020*
- Developed lossy image compression and lossless text compression.
- Utilized extensive use of data structures (quad trees, Huffman encoding) to facilitate various algorithms.
- Created adjustable text and image compression ratios for granular compression.

EDUCATION

University of Toronto | Honors Bachelor of Science (HBSc) | Mississauga, ON | September 2019- June 2023
Concentrations: Major in Computer Science; Major in Applied Statistics

SKILLS & INTERESTS

Technical: C, C++, TypeScript, JavaScript, Java, Python, Django, R, PostgreSQL, Azure AI, Linux, UNIX