

# MOMIN NASEEM

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## PROFESSIONAL EXPERIENCE

### Project Human City – Backend Developer

December 2022 – Present

- Deploy Apollo Server to Google Cloud Functions for database management.
- Design database schema to store user information in GraphQL.
- Write NodeJS code and tests, build prototypes, resolve issues, and profile and analyze bottlenecks.
- Manage and optimize scalable distributed systems in google cloud
- Design robust REST APIs to support mobile and desktop clients.

### UTM Capital Management– Web Developer; Mississauga, Canada

September 2022 – Present

- Used WYSIWYG to improve functionality and optimize the website.
- Converted mockups to JavaScript and HTML.
- Determined requirements for site creation and security.
- Tested websites and performed user testing and troubleshooting prior to deployment.
- Analyzed user requirements and developed the back-end.

### eWorx – Software Developer intern

June 2022 – December 2022

- Work with an agile team to develop an automated grading system for MacEwan University.
- Clean the existing React JS and Django codebase by conducting code review to optimize the application by 25%.
- Enhance application features by working on Django backend.
- Perform in-depth testing to eliminate vulnerabilities and bugs in ReactJS front-end by 50%.
- Design a comprehensive user interface using Figma to improve user interactivity.
- Liaise with the client to add and change platform functionality to fit the needs.

### Weerv – Software Developer

June 2022 – September 2022

- Deploy REST API Integrations in python to eliminate manual tasks.
- Reduce manual queries by using HTTP method calls.
- Reduce manual data cleanup by extracting key data from inventory database and automated data cleanup using the Pandas library.
- Utilize Google Content API calls to eliminate manual product lookup by 80%.
- Accomplish automated product price analysis to increase product sales by 10%.

### myLaminin – Software Tester

July 2022 – August 2022

- Reduce testing time by 50% by developing automation scripts for qualifying cases and regression testing.
- Facilitate black box testing of VueJS front-end to reduce bugs by 20%.
- Develop a strategy and structured plan for the development of the automated tests.
- Ensure tests are adequately documented and structured to facilitate ongoing maintenance and optimization by the IT team.

### University of Toronto Mississauga – Engineering Design Lead; Mississauga, Canada

April 2022 – September 2022

- Provide a clear comprehension of "zone" speaker design and solved software/hardware issues regarding LAN.
- Conduct research on sound system design.
- Provide methods to maximize design value given the parameters of the space.
- Review architectural drawings highlighting required changes.
- Diagram the speaker, cable, and control system (including the LAN) based on the architectural drawing.
- Drafted an installation document that outlines tasks & sequence of installation.
- Liaise with the project manager on the installation with UTM system administrators and IT department.

## PROJECTS

### Scalable database algorithms | 2022

- Implement database join and partitioning algorithms to join sizable databases in parallel.
- Perform performance profiling to determine and use the best performing approach.
- Improve scalability of database joins by 5x using the OpenMP API.
- Achieve higher scalability by utilizing multiple computers using the MPI library.

### **Image classification and Natural Language Processing** | 2022

- Implement KNN, Bernoulli Naïve Bayes and Multi-layer Perceptron algorithms to model text and classify images.
- Create and process training data to train and validate the ML models.
- Perform performance profiling to tune various hyper-parameters of the models.
- Achieve classification accuracy of 80% on untrained data by using k-fold cross-validation.

### **CUDA Image processing** | 2022

- Implement various kernels to perform image processing with different filters.
- Utilize CUDA C++ API to parallelize the algorithms.
- Perform performance profiling to analyze different algorithms and optimize them.
- Achieve 10x faster image processing using GPU acceleration.

### **Unix Shell** | 2022

- Implement low-level bash-like shell in C.
- Write various built-in commands with functionality mimicking bash.
- Implement features such as environment variables, piping, and file streams.
- Implement TCP client and server communication to facilitate remote command execution.
- Facilitate the use of POSIX standards to build cross-platform functionality.

### **Game Store** | 2021

- Utilize a Java back-end and front-end to create a video game store.
- Create support for user account management and transactions.
- Deploy a flat-file database for keeping user and account history.
- Develop a front-end GUI with Java Swing.

### **Doodle Jump** | 2021

- Implement a platform game using MIPS assembly.
- Achieve working keyboard intercepts and driving.
- Implement driving a bitmap display with complete graphics.

### **Text and Image Compression Software Suite** | 2020

- Develop lossy image compression and lossless text compression.
- Utilize extensive use of data structures (quad trees, Huffman encoding) to facilitate various algorithms.
- Create adjustable text and image compression ratios for granular compression.

## **EDUCATION**

**University of Toronto | Honors Bachelor of Science (HBSoc)** | Mississauga, ON | 2023

Concentrations: Major in Computer Science; Major in Applied Statistics

## **SKILLS & INTERESTS**

**Technical:** C, C++, Python, JavaScript, Django, Java, R, PostgreSQL, Assembly, Azure AI, MS Office