Hamza Kheldoun

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EDUCATION

George Mason University | Bachelor of Science in Computer Science May 2022

- GPA: 3.64/4.0
- Dean's List Fall 2020, Spring 2021, Fall 2021

Relevant Courses:

- **Computer Science:** Object-Oriented Programming, Data Structures, Formal Methods and Models, Computer Systems and Programming, Software Engineering, Analysis of Algorithms, Databases, Data Mining, Operating Systems, Web App Development, Software Testing/Maintenance

SKILLS

Programming Languages: Java, C, Python, HTML, CSS, SQL, Javascript, Lisp, Haskell

Technologies/Skills: VSCode, Github/GitLab, Heroku, Tensorflow/Keras, Unix, Bash Shell, Agile Development

PROJECT EXPERIENCE

Personal Portfolio

- Built a personal portfolio website using HTML, CSS, and JS.
- Site supports multiple screen sizes and devices.
- Deployed the site to the web using Netlify. Link: hamzakheldoun.netlify.app/

Unix Shell

- Built a fully functional Unix shell using C that allows users to use any bash commands.
- Fully supports advanced features such as background processes, foreground processes, running any number of jobs simultaneously, job control, file I/O and redirection, and control operators.
- Installed custom signal handlers for keyboard interrupts.
- Built-in commands not included with a basic bash shell.

JUNG Graph Class

- Implemented a directed graph class for the JUNG Framework in Java.
- JUNG is an open source framework utilized by thousands to visualize data represented as graphs.
- Demonstrates use of complex data structures like graphs using different techniques such as adjacency matrix.
- Demonstrates knowledge on working with a pre-existing code base and adding on to it.

Product Transaction Database

- Developed a command line tool to interact with a SQL database storing product transactions and their details.
- Supported functionality includes searching from any of the tables with any desired combination of fields from the database.
- Built the CLI in Java and connects with the SQL database using JDBC.

Operating System Modification

- Worked with a peer to implement new features in an existing operating system
- Implemented features include mutex locks, a waitpid() function, a fork() function, and most of the basic system calls as well as some programs designed to utilize those functions
- Implemented the features in C and managed version control using GitLab

Sign Language Image Classifier

- Utilized Python with Tensorflow/Keras to build neural network models capable of classifying images of ASL.
- Utilized Sign Language MNIST dataset from Kaggle for the training and testing data
- Utilized both a three layer feedforward network and a convolutional neural network to compare accuracy of two different types of neural networks.
- Plotted results from both neural networks using heatmaps and bar plots for accuracy visualization