Nusair Islam
Electrical Engineering Student

815 W 46th Ave, Vancouver, BC, V5Z 2R4 | 403-805-6689 | nusair11@gmail.com | https://www.linkedin.com/in/nusair-islam/

Skills

Programming Languages: Python, C#, JavaScript, C, C++, HTML/CSS, Bash, ARM assembly, 8051 assembly, Verilog, SystemVerilog, TCL, MATLAB, XML

Frameworks/Libraries and Databases: JQuery, React, MongoDB, Mongoose, MySQL, Node.JS, EJS, TensorFlow, Apache Spark, PySpark, Threading

Tools and Platforms: Git, Linux/Unix, Amazon Web Services, GrabCAD, Visual Studio, Unity, MS Office, Heroku, Quartus

Simulator: Ansys, PowerArtist, ModelSim, Verdi

Education

UNIVERSITY OF BRITISH COLUMBIA   Anticipated April 2023
Bachelor's Degree of Applied Science,
Major in Electrical Engineering
Minor in Physics

Certifications

THE COMPLETE 2022 WEB DEVELOPMENT BOOTCAMP   NOV 1, 2021
Udemy

- **Certificate number:** 0da8ce1d-cd19-4510-be45-5d906dbef694
- **Certificate URL**: https://www.udemy.com/certificate/UC-0da8ce1d-cd19-4510-be45-5d906dbef694/
- **Relevant skills learned**: HTML/CSS, DOM, JavaScript, jQuery, Node.JS, Express.JS, EJS, SQL, MongoDB, Mongoose, Heroku, RESTful APIs, Authentication, React.JS

Work Experience

ANSYS   SEPT 2021 - PRESENT
Electronics Research and Development - 3D GUI at Ansys

- Implemented compatibility with latest MATLAB/Simulink version and desktop software using C++
- Modeled four complicated 2D/3D toroid structures on CAD and ran eddy current analysis using defined excitations and calculated resultant torque
- Eliminated 95% of build warnings and errors in Maxwell EDT Software in C++

INTEL CORPORATION   JAN 2021 – AUG 2021
ASIC Power Efficiency Engineer – Non-Volatile Solution Group

- Created and trained a TensorFlow dense neural network regression model to calculate data leakage power with over 75% accuracy given cell counts and areas as inputs
- Utilized Apache's PySpark Machine Learning to create and train a linear regression model pipeline that calculates leakage power given cell counts and areas as inputs with over 70% accuracy
- Debugged SV module using Ansys PowerArtist to reduce number of unknown nets from 100,000+ to ~1000
- Solved critical timing errors preventing compilation on over 1000 pins of SystemVerilog PMC model

UNIVERSITY OF BRITISH COLUMBIA   SEPT 2020 – APRIL 2021

APSC 160 – Introduction to Programming in C, Teaching Assistant

- Ran office hours and mentored over 100 students on the basic principles of programming and software engineering in C
- Created presentations for over 200 students on topics such as stack memory theory, variable memory allocation, heap and stack memory, binary trees, sorting, data structures, and runtime optimization in C

ROCSOL TECHNOLOGIES INC.   MAY 2020 – SEPT 2020

Junior Software Intern

- Created integral application in C# to utilize user input data and generate a dynamic diagram showcasing the output of the program in a visualize manner
- Created animation in C# to read output data from DWOB software and generate a dynamic animation showcasing the path of the drill bit inside the wall and the rock fracture points
- Debugged over 100 critical build errors in DWOB software

Courses

SYSTEM SOFTWARE ENGINEERING

CPEN 333, UBC

SYSTEMS AND CONTROL

ELEC 341, UBC

ELECTROMAGNETIC FIELDS AND WAVES

ELEC 311, UBC

CIRCUIT ANALYSIS II

ELEC 301, UBC

ELECTRONIC MATERIALS AND DEVICES

ELEC 315, UBC

ELECTRONICAL ENGINEERING DESIGN STUDIO

ELEC 291, UBC

INTRODUCTION TO MICROCONTROLLERS

CPEN 211, UBC

Technical Experience

UBC OPEN ROBOTICS   SEPT 2021 - PRESENT

Electrical Team

- Implemented Arduino circuits for gyroscope detection
- Performed current analysis to choose capacitor values for temperature sensing circuit

UBC ELECTRICAL ENGINEERING PROGRAM   JAN 2020 – FEB 2020

Reflow Oven Controller

- Created a circuit on a breadboard that used a thermocouple and operational amplifier to measure the temperature inside the oven relative to a reference point outside the oven with over 80% accuracy.
- Created a pulse-width modulator to input power into the oven.

- Created a finite state machine that would store speech data into a memory disk, and when the oven reached various temperatures and states, the voice would read out the respective temperatures and states.

UBC ELECTRICAL ENGINEERING PROGRAM   OCT 2019 – NOV 2019
Simple Reduced Instruction Set Computer (RISC) on Verilog

- Created a machine on Verilog that can store and load information from RAM and perform arithmetic operations.
- Programmed an arithmetic logic unit to add, subtract, and shift numbers in binary.
- Created a decoder that decoded the 32-bit instruction into specific steps that would perform instructions.
- Created testbenches on Verilog and ran the tests on ModelSim to ensure the modules were correct.

UBC ORBIT   SEPT 2018 – APRIL 2020
Structure Sub-Team

- Created a python script that converted irradiance values from a CSV file into temperature and wrote the data onto a separate CSV file.
- Overhauled the casing design of the satellite on SolidWorks so that compartments can be easily accessed.
- Designed external rails on SolidWorks that will be used in the main assembly to connect different modules.

VEX ROBOTICS   SEPT 2014 – APRIL 2017
3388E Team Member

- Robotics competition with a goal of creating a user-controlled and autonomous robot that will participate in a cone stacking game.
- Achieved 1st place in the Calgary Regionals VEX Robotics Competition.
- Utilized hacksaws, bandsaws, drills, and Dremels to create the parts necessary for constructing the robot.
- Programmed the robot, in C, to respond to sensors in an autonomous mode and a wireless controller.

Personal Projects

AI PERSONAL ASSISTANT   NOV 2020 – PRESENT
- **Programming language:** Python
- **Libraries:** TensorFlow, Spark, Numpy, Pandas, OpenCV
- Utilized Apache's PySpark API to build and train a logistic regression pipeline model that assigns states to voice command inputs with over 80% accuracy.
- Created and trained a TensorFlow model with OpenCV to create a facial detection pipeline that detected user's faces with over 70% accuracy.

UNITY GAME DEVELOPMENT   JULY 2020 – PRESENT
- **Programming language:** C#
- **Libraries:** Unity libraries, Threading
- Created battle controller that tracked over 100 active objects and updated the state of the game when an object made an action
- Utilized Threading library to create multi-threading system that dynamically renders multiple shapes for a stage and cuts run time by 30% compared to single-threading

Interests & Activities
Bodybuilding, video games, song writing, guitar, cooking, Hung Gar Kung Fu, basketball, hiking, theoretical physics