Smit Bhavsar

ON, Canada | (647)-562-9615 | smit.bhavsar93@gmail.com | linkedin.com/in/smitbh/

Education

Toronto Metropolitan University (prev. Ryerson University), Toronto, ON 09/2019 – 04/2024
Bachelor of Engineering (B.Eng.), Computer Engineering Co-op Program
CGPA: 3.53/4.33 (A-), Dean's Honour List 2019/20, 2021/20

Technical Skills

Operating Systems: Linux, Microsoft Windows, Apple MacOS
Languages: Python, Java, C#/C++, JavaScript, HTML, CSS, Assembly, Ruby, Perl, Git
Applications: MATLAB, SolidWorks, Fusion360, Multisim, Quartus, AutoCAD, VS Code, Jenkins
Technologies: Confluence, JIRA, Twiki, React.js, Node.js, VHDL, Verilog, ModelSim
Tools: Perforce, GitHub, AWS, DirectX, SQL, Pandas

Work Experience

AMD (Advanced Micro Devices) 05/2022 – 08/2023
Design Verification & Infrastructure Engineer Intern

- Improved, modified and maintained a regression system with Perl, Ruby and MySQL used by teams across different time zones to add, update, dispatch and review tests on the latest design and frameworks.
- Advanced scripting using Perl and Ruby/Python to automate several aspects of the test bench, including maintaining a sanity/regression dashboard "smart" system, and validating incoming Perforce changes
- Developed test cases for verifying the functionality of exclusive features by partnering with SOC and IP teams.
- Reduced amount of sanity/regression test failures by 60% per week (down from 10 a week to 4 a week on average) by implementing various debugging techniques, and launching a new failure_analysis.rb script to automatically filter failures and provide mini descriptions to common failures.
- Created helper scripts in Linux shell in Python/Ruby as well as bash to automate day to day tasks.
- Used Python/Ruby and bash scripting, developed an automation script that creates a sim build on a cloud server, transfers build to the specified system, performs regression testing, renames and saves all the log files.
- Created a disk monitor script in Python/Ruby, displaying disk usage of all our regression disks in a certain moment in time, made entirely on our Linux environment
- Reduced manual labor for regression to ≈ 0 and increased performance efficiency ≈ 200%.
- Used Confluence and JIRA for ticket and task tracking as well as documenting all my work before finishing my internship.
- Trained incoming co-op students to ensure a smooth transition to a fast-paced work environment by making PowerPoint presentations and often staying back to help them solve questions related to their tasks.

Dr. X Academy of Robotics and Coding 04/2021 – 04/2022
Robotics and Coding Instructor

- Instructed classes of 15-20 students on 2D/3D game making using Unity with both text-based coding (such as C# and Python) as well as mobile app development using App Inventor (primarily Android).
- Taught a variety of robotics classes which included the use of many gyro, light and ultrasonic sensors, one of the topics included simulating Tesla's accident avoidance system.
- Increased the attendance of FTC as well as FLL robotics classes by 20% throughout the summer.
- Educated a small class of 5-7 high school students on Java, including the basic principles of object-oriented programming, inheritance, encapsulation, abstraction and polymorphism.

Projects

Media Centre Application
Keil uVision (NXP LPC1700 ARM Cortex-M3 Processor Board)

- Developing a Media Centre Application on the LCD panel of the processor board consisting of a photo gallery, a mini game (Flappy Bird) as well as an MP3 player
- Coding heavily in C, whilst also using MPEG decoder embedded software to implement this function onto the board whilst interacting with a live Linux environment to ensure the Media Application is submitted correctly
- Using the concepts of multithreading learned in class and incorporated threads into application as well

Smart City Application (Capstone Project)
C++, Python, MySQL

- Designing and developing a smart city application by making a model city and implementing a wide array of features, such as finding the nearest EV charger, reserving a parking spot as well as other features
- Incorporating concepts learned from my Data Engineering class as well as knowledge of MySQL to develop backend as well as added Google Maps API along with it, coding the rest of the project in C++ and Java
- Developing key project management traits, including constant communication with my team members and meeting with the FLC weekly on updates and using Gantt charts as well as JIRA to track current team tasks

Memory Hierarchy: Cache Controller
Xilinx ISE (Xilinx Spartan-3E FPGA Board 32-bit RISC Processor and DDR)

- Developing a simple Cache Controller (SRAM Based) and programmed fully in VHDL and C#
- Incorporating block diagrams, finite state machine diagram as well symbol diagrams and results were verified upon generating waveforms. Programmed entirely on a Linux based environment

Multi-Stage Buffer Amplifier
NI Multisim

- Systematized a circuit with a 3-stage 2N3904 transistor configurations with a single-supply that included a multistage, inverting, transistor amplifier to meet electrical requirement.
- Circuit was engineered and designed upon Multisim software for voltage gain, quiescent current and input / output resistance.

General-Purpose Processor
VHDL / Quartus II

- Constructed a general-purpose processor with the help of 3 different arithmetic logic units (ALU).
- Incorporated Latches, 4-16 Decoders, Moore/Finite State Machines (MSM/FSM), were all used in the creation of the ALU's and the results were all displayed in seven-segment displays (SSEG).
- Downloaded the program on a FPGA board and displayed the outputs on LEDs and 7-segment displays.

Portfolio Website
HTML • CSS • Bootstrap • JavaScript / Visual Studio Code

- Designed and developed a fully responsive portfolio website using HTML, CSS and JavaScript.
- Also used Bootstrap Framework to incorporate open-source templates for UI Interface elements.

University Leadership Experience

Soccer World Ryerson 03/2021 – 04/2022
Head Graphic Designer

- Designed 2+ graphics per week, including weekly flyers for upcoming games as well as events and saw engagement rise on Instagram by over 20%.
- Made daily Instagram stories which saw our page rise from 20 followers to 100+ followers within the first 3 months of starting.

Ryerson Gujarati Association (RGA). 09/2020 – 04/2022
Vice President of Technology

- Launched a fundraiser for the COVID-19 crisis in India and collaborated with Brock GSA and Laurier GSA to raise over $1400.
- Monitoring and making a website for the newly formed organization, including finding a suitable domain that fits the needs of the organization.
- Led a team of 5 and increased overall engagement on social media and on our website by 25% in our first year.

Hobbies & Interests

- Playing soccer, going to the gym as well as other physical activities
- Learning new programming languages and frameworks in Linux during my free time, along with reading
- Gaming, primarily Overwatch 2, Rocket League, Call of Duty and FIFA
- Built a PC with AMD parts: (Some parts are listed below)
    - CPU: AMD Ryzen 5 3600 3.6 GHz 6-Core Processor
    - Motherboard: ASRock X570 Phantom Gaming 4 ATX AM4 Motherboard
    - Graphics Card: ASRock RX 5700 XT Phantom Gaming D 8G OC Radeon RX 5700 XT 8 GB Video Card
    - RAM: Silicon Power XPOWER Turbine 16 GB (2 x 8 GB) DDR4-3200 CL16 Memory