Karim Soubra

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Education

Toronto Metropolitan University, Toronto, ON **September 2024 - April 2026**
Masters of Applied Science, Electrical and Computer Engineering
Toronto Metropolitan University , Toronto , ON **September 2019 - April 2024**
Bachelor of Engineering , Computer

Skills

Language:Verilog, VHDL,Python, C/C++ , Java, Javascript, SQL, BASH
OS: Windows, Linux , Mac OS
Framework: Tensorflow, Pandas, React.js, Node.js, HIP/CUDA, Flask, BS4
Tools: Quartus, Multisim, Git/Github, Perforce, Virtuoso Layout Editor
Other Skills: Computer architecture, NoSQL, Breadboard, Oscilloscope, Multimeter, REST API, Command Line Terminal, RTOS ,

Work Experience

Data Center Power and Performance Engineer – AMD, Markham, ON May 2022-June 2023

- Debugging Performance and Power Related issues
- Implemented test automation using **Python** and **Pandas**
- Validate power management features and power attainment
- Validate bandwidth and latency performance to meet KPIs
- Setting up test benches in the lab
- Document technical specifications and procedures related to scripts and automation tools
- Performing Leakage Characterization on GPUs
- Analyzing Power and Performance Data on MI300 GPUs
- Facilitating meetings on power and performance data

Projects

CPU – VHDL, Quartus, Computer Architecture, Digital Systems

- Designed using **VHDL** and **Quartus**
- Designed the CPU according to the CPU specification,supports branch instructions,ALU operations,Load operation, and Store operations
- 32 bit processor which included the implementation of a data path , program counter, memory unit ,control unit , and ALU

Bookstore – Java, Object oriented programming, UML diagrams

- Applied software design concepts during the planning phase

- Developed class diagram, use case diagrams , and state diagrams
- Utilized **OOP** to develop low coupling and high cohesion between classes
- Applied concepts of polymorphism to simplify the code and class diagrams

Google Web Scraper – Python, Object oriented programming , Pandas , BS4

- Utilized web scraping to collect customer reviews from Google
- Practiced using web scraping APIs such as **BS4**
- Applied **OOP** concepts such as polymorphism to simplify the code
- Utilized flask to communicate with the backend
- Practiced concepts of **REST API** techniques
- Organized data collected using pandas

Recommender System – Python, Tensorflow, Machine learning, Pandas

- Built a Recommender system that recommends movies
- Practiced **machine learning** techniques to implement a recommendation algorithm
- Utilized **Tensorflow** to implement a multi layer neural network
- Implement a hybrid approach that takes into account content based filtering and collaborative filtering

Multi-stage voltage amplifier – Multisim, Analog Circuit Design

- Built a multi-stage amplifier according to specification
- Utilized small signal analysis techniques to calculate gain
- First stage of the amplifier consisted of a common emitter amplifier
- Second stage of the amplifier consisted of common collector amplifier
- The common emitter was chosen in order to supply to required again
- The common collector amplifier was chosen due to its high input impedance and low output impedance

Gaming PC

- Learned how to put together PCs
- Specifications:
    - CPU: AMD Ryzen 7 5700
    - RAM: 16 GB Corsair vengeance DDR4
    - Motherboard:MSI PRO B550
    - GPU: Nvidia 3070
    - Cooler: Noctua NH-D15
    - Storage: 500 GB NVME SSD
    - Case: Corsair 4000D
    - Power Supply: Thermaltake 850 W platinum