Nikhil Kharbanda

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Skills

Programming	C, C#, WPF, MVVM, LaTeX, Python, Java, Javascript, HTML5, CSS, ReactJS, SQL/NoSQL
Hardware	Waveform Generator, Oscilloscope, COBRA55, NXP S32, Vector CAN Hardware
Software	Vector CANoe, IBM Rational, EBTresos, ETAS INCA/ISOLAR, Beyond Compare, TRACE32 Lauterbach
Tools	GitHUB, AutoCAD, Google Suite, Synergy, MatLAB & Simulink, NodeJS, npm, REST API's
Miscellaneous	PLC applications, Tele-communications, Satellite communications, VoIP, Agile Methodology, Root Cause Analysis, Test Plan Development, Peer Reviewing

Experience

Stellantis (Formerly Fiat-Chrysler) **Auburn Hills, MI**
Base Software Engineer **April 2022 - Present**

- Perform reviews and inspections for requirements, design documents, C/C++ code and test plans
- Work with other engineering teams responsible for the development of software for engine and transmission control modules
- Made innovative tool changes allowing for global auto-generation and testing software
- Developed and validated processes related to hardware/software for various vehicle programs
    - Integrated supplier LLD software and validated all I/O's
    - Integrated changes made upon request from application teams regarding specific I/O signals
    - Delivered software prototypes for one-off's requested by external teams
- Made tool changes used by internal team:
    - ICIV: Improved on the existing tool to display a progress bar, showing the user a real-time status of the tool
    - IOGen: Developed tool changes allowing for global automated generation used by external teams
- Implementing signal changes on the I/O hardware abstraction layer in AUTOSAR architecture

CBC (Canadian Broadcasting Corporation) **Toronto, ON**
Project Manager/Engineering Intern (3 summer terms) **May 2017/2018/2019 – August 2017/2018/2019**

- Assisted with various projects encompassing multiple departments
- Responsible for creating concept designs and block diagrams for client reviews
- Built project schedule, budget, and CAD drawing for client approval
- Tracked project progress closely to ensure projects are delivered within schedule and budget

Education

Bachelor of Computer Systems Engineering **Graduated April 2021**

Carleton University, Ottawa ON, Canada

- A 4-year program focusing on combining hardware and software to design and implement integrated computer systems for applications such as robotics, AI, aerospace, avionics systems, cloud computing.

Introduction to Databases Certificate **Completed July 2021**

University of Waterloo, Waterloo ON, Canada

- A 6-week program focusing on how to plan, organize and manage data, and how to translate that data to readable documents

Advanced PC Security Certificate **Completed August 2021**

University of Waterloo, Waterloo ON, Canada

- A 6-week program focusing on the fundamentals of PC and network security. Learned about the vulnerabilities of operating systems, software, and networks. Developed understanding of exploits used to access computers and firewalls for prevention.

Microsoft AI Fundamentals Certificate **Completed August 2021**

University of Calgary, Calgary ON, Canada

- A 2-week program focusing on concepts related to machine learning and AI using Microsoft Azure services. In this course, gained familiarity with ingesting data, building machine learning (ML) models, and deploying models as REST API services.

Bootcamp Certificate – Full Stack Developer **Completed November 2021**

University of Toronto, Toronto ON, Canada

- A 24-week intensive program focused on gaining technical programming skills in HTML5, CSS3, JavaScript, JQuery, Bootstrap, Firebase, NodeJs, MySQL, MongoDB, Express, Handelbars.js & ReactJS.

Projects

MirrAI – Computer Systems Engineering Capstone Project

- Built Smart Mirror using Raspberry Pi Embedded System and Machine Learning algorithm that can propose dress suggestions based on weather reports and what the user is currently wearing.
- Assisted with machine learning algorithm development using Python and Google Collab. Designed the User Interface utilizing Javascript and Python
- Responsible for applying for university funds and maintaining expenses within budget of $2000
- **System Workflow:**
    - The camera scans and detects the outfit, uses Python scripts to find similar images from Training Data
    - Uses Bing API to search the internet for images of similar outfits, returns 4 top results and stores in a temporary storage
    - JavaScript based UI scans the temporary storage and displays the results, one at a time as a slideshow preview
    - Users can hit the Refresh button to get additional suggestions from the internet

Autonomous Driving & Recharging System

- Upgraded an older Roomba with autonomous driving, including self-drive feature to an automated charging station
- Attached ultrasonic / photoelectric sensors to Roomba
- Programmed an Arduino for Roomba to sense and navigate around obstacles
- Programmed second Arduino and a servo motor as part of charging station
- Mechanical servo powered arm would lower and re-charge the on-board battery, once Roomba's presence confirmed within proximity of charging station

Hobbies

- Enjoy various team sports such as volleyball, ultimate frisbee and dodgeball.
- Passionate about yoga during the day

References Available Upon Request