JENISH RUDANI

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EDUCATION

- **Master of Engineering in Engineering Science**
  Simon Fraser University, CANADA
  2021 - 2023
  GPA : 3.83

- **Bachelor of Technology in Electronics and Communication Engineering**
  Dharmsinh Desai University, India
  2016 - 2020
  CGPA : 8.25/10

EXPERIENCE

Graduate Teaching Assistant - CMPT 786, SFU Burnaby, CA *(January 2022 - Current)*

- Graduate Teaching Assistant for CMPT 786 G100 Cloud and Network Security
- Responsibilities: Grading Assignments and Homework, TA Office Hours, Doubt Solving

Embedded Software Developer, GuardRFID Delta, CA *(September 2021 - Current)*

- Working on Bare-Metal Firmware Development for the new BLE Beacon Tags used in Health Care Industry for RTLS(Real-time locating system)
- Designing and developing firmware for accelerometer, Low Frequency Signal Decoding, IR Sensor using I/O, I2C, and SPI while having lowest power consumption in Active Mode.
- Working on Cisco DNA Spaces to deploy RTLS solution based on BLE at Scale for Asset Tracking, and Access Control
- Deployed Cisco Catalyst 9800 WLC on VMWare ESXi Hyper visor on Office Network

Embedded Systems Engineer, Ultimuslab Ahmedabad, IN *(March 2020 - August 2021)*

- Designed a modular prototype to track Fridge Inventory for the US Consumer market, and shipped four prototypes to Florida and Massachusetts
- Leveraged QR Codes to identify individual items, worked closely on Wake-Work spotting to utilize user voice inputs for short, quick actions
- Collaborated with various team member, took self initiatives to independently and iteratively improved the prototype design
- Utilized python for rapid prototyping, and leveraged C Static, Dynamic Libraries where necessary for faster sensor interfaces such as ST's ToF Sensor
- Assigned tasks, managed finances, managed overseas PO for developing multiple prototypes for field testings
- Maintained the entire project, and mentored intern to develop the talent
- ***Tech. and Tools Used:*** Python3, C/C++, I/O, Interchip Communication Protocols (I2C, SPI), Raspberry PI, ESP32, GCP, AWS, Flutter, MySQL, EasyEDA, SMT, Fusion360, 3D Printing, CNC Cutting

Embedded Systems Engineer, SCM Noble Agencies Vadodara, IN *(Dec 2019 - March 2020)*

- Continued the summer internship to better the accuracy by utilizing motion detection system
- Used time of flight sensor to increase location detection accuracy of RFID tag motion to 80% from 40%
- Developed an Android Application and integrated firebase database for real time updates on the app
- Designed a system in such a way to easily and quickly load Medicinal Inventory, as well as implemented reminder/alert system based on user input
- ***Tech. and Tools Used:*** Python3, UHF Simultaneous RFID Reader, Google Cloud Speech API, Raspberry pi 3 B+, Microphone, Speaker, Google Firebase Realtime Database, Android Studio
- ***Further Reference:*** Video | Thesis | Certification

PUBLICATIONS

"Cryptographic Communication between Two ESP32 Devices", International Research Journal of Engineering and Technology, Volume 8-Issue 01

"Design and Simulation of 32-Bit Floating Point Arithmetic Logic Unit using VerilogHDL", International Research Journal of Engineering and Technology, Volume 7-Issue 12

PROJECTS

Smart Mirror *(Guide: Prof. Vasim A. , April 2019)*

- ***Objective*** : To design a One-Way Smart-Mirror to display information in the form of widgets, having voice based Home-Automation control and live audio streaming from YouTube, Spotify with custom User actions
- ***Tech. and Tools Used:*** Python, C/C++, Linux, Google Assistant SDK, SNOWBOY Detector, NodeMCU v1.0, Relays, Microphone, Speaker, Raspberry PI 3B, One way Mirror, Aluminum Frame
- Implemented complete voice control of mirror (With custom Wake-word "Mirror"). Mirror can display various widgets such as Daily Schedule, Weather Data, Now Playing, News, System Status
- Leveraged Google Assistant SDK to detect command which triggers an event to control remote home appliances or Stream music from different platforms such as Spotify, GANNA, and YouTube
- Implemented Home Automation using remote standalone ESP8266, which communicates through WiFi protocol with Raspberry pi to control home appliances
- ***Videos and Report:*** Project Report | Demo 1 | Setup Snapshot

Wireless Surveillance Rover *(Guide: Hackster.io, April 2017)*

- ***Objective***: To make a battery powered remotely controllable rover
- ***Tech. and Components Used:*** Lighttpd, Raspberry Zero W, Camera, DC motors, Motor Driver (L293D), Battery, Custom BMS
- Designed a battery powered wireless rover, which can be remotely controlled
- Developed an end to end system to stream real time Audio/Video feed through on board 5 MP Camera on Rover
- Reduced latency to approximately 100 to 200 ms by utilizing lighttpd server from 2000ms, which was marked while relying on apache web-server
- ***Further References:*** Demo-Video

VOLUNTEERING ACTIVITIES

Code Life Ventilator Challenge (Consultant Engineer) *(Team: Adhoc Inventors , May 2020)*

- Designed a system to help report pressure, airflow, and humidity by using Arduino Nano
- Leveraged Python to receives and better analyze the data from pressure/humidity sensor on raspberry pi
- Had an amazing experience working with intelligent people of "Adhoc Inventors" from all over the world
- Learned a lot about ventilator, and especially the precision & accuracy required in medical devices
- ***Further References:*** Certification | Working Demo by Team Leader

Workshop on PIC controller (Teacher) *(IEEE Student Branch, January 2019)*

- ***Objective***: To instruct students on practical embedded systems
- ***Tools Used***: MPLAB, Proteus, PIC16F877A Development Board
- Taught junior students the basic embedded C programming structure, pic controller architecture, and to efficiently read data-sheet of any microcontroller
- Taught and presented the working of GPIO, ADC, SPI peripherals in PIC16f877a's dev board
- Students wrote the code for ADC and Seven-Segment display independently, simulated it using the Proteus tool, and finally burned the hex into the PIC16F877A development kit to observe the output
- ***Further References :*** Student Feedback form | Snapshots

FIELDS OF INTEREST

Mathematics, Edge Machine Learning, Teaching, Internet of Things (IoT), Embedded Systems

TECHNICAL SKILLS

Programming Languages : C/C++ (4+ Years), Python (proficient), Rust, Shell

OS : Linux(4+ Years), RTOS, Windows

Tools : GIT, VS Code (proficient), PlatformIO, Proteus, Keil, MPLAB, EasyEDA

STRENGTHS

Creative and Innovative, Team Player, Fast Learner, Self-Motivated and highly Adaptive, Leadership/Mentor-ship, Great Problem Solving

Communication (Presentation, Teaching, Confidence, Empathy, Active Listening, Written and Speaking)

LANGUAGE SKILLS

International English Language Testing System (IELTS) : 7.5 Band

HOBBIES

Teaching, Basketball, Reading Novels (Favourite- The Name of the wind), Music (Favourite: Melodic Dubstep)