

SWATHI GUBBI PRAKASH

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SUMMARY

Majors- Network engineering and Embedded systems. Proficient in Data structures and Algorithms and have hands-on coding experience. Actively seeking Full-time opportunities in Computer networks, embedded software development, and firmware engineering roles. Available to work immediately.

EDUCATION

Master of Science , Electrical engineering The University of Texas at Arlington	<i>Aug 2018 - May 2020</i> GPA: 3.4
Bachelor of Engineering , Electronics and Communication Visvesvaraya Technological University	<i>Aug 2014 - May 2018</i> GPA: 3.5

SKILLS

Programming/Scripting Languages: C, C++, MATLAB and SIMULINK
Tools: Android Studio, Visual Studio Code, Code composer studio, microsoft office
Microcontroller peripherals: UART, SSI/SPI, I2C, DAC, ADC, GPIOs, CAN, TIMERS
Network layer protocols: UDP, TCP/IP

EXPERIENCE

Intern, The University of Texas at Arlington Research Institute *Aug 2019 - May 2020*

- Built a data acquisition system which is used for making sensitive, narrow-band AC voltage (or current) measurements.
- Generate signals of various patterns of variable frequency and phase and these signals were given to the magnetostrictive sensor.
- The experimented data/response from the sensor was recorded on a .csv file. An SFTP connection was established and the file was sent to the PC.
- The programming language used -C

PROJECTS

Programmable pulse generator using TM4C123GH6PM Texas Instruments Microcontrollers-ARM M4F

- ARM M4F: Generate various waveforms that are available at the two analog outputs. Providing two analog inputs allow measurement of the amplitude of a signal. This project has a command-line interface capable of controlling the system and providing measurement data back to the user. Microcontrollers used to receive characters shell commands by the user through the console with UART (Baud rate 115200). The timer interrupt was configured to trigger on every 1ms to see if it has received any data in the buffer.

- Programming Language: C
- Tools: Code Composer studio
- Microcontroller peripherals: UART, SSI/SPI, I2C, DAC, ADC, GPIOs, CAN, TIMERS.

System level design for a Mobile Wireless User Terminal using Convolution codes in MATLAB

- In this project, system-level design for a mobile wireless user terminal was designed using block phase estimation algorithm for a MIMO system. The GPDCH was designed as per the given requirement.
- Rayleigh Channel was used with Rician flat fading with various doppler shifts with QPSK modulation.
- Theoretical values of BER were compared with its practical values. Four Path Diversity with Maximal Ratio Combining (MRC) was used to observe the gains.
- Software: Matlab and Simulink

Gesture recognition for navigation of TurtleBot on Robot operating system

- Created a network using Raspberry Pi and created nodes and packages.
- At one node hand gesture is detected and the number of fingers (gestured) in front of the camera is detected. The control signals are sent to another node (TurtleBot) and the TurtleBot navigates in an unknown environment using the RGB-D SLAM approach, concurrently building a 3D map of the environment. The robot moves towards the target station matching the number of fingers detected.
- Software: Code composer studio, Matlab and Simulink

RFID based Smart warehouse system

- Built a smart warehouse system using Arduino ATmega328. The main objective of this system was to implement workers safety and efficient power consumption.
- The input to the Arduino is given by the IR Sensor based on which the interfaced Lighting system works.
- The locking system is also interfaced with the Arduino board which in turn works based on the output given from the RFID sensor. This helps in Personnel Authorization.
- There is a Counter which takes the count of the number of authorized people entering and exiting the warehouse and the door locks if both the numbers are tallied. The Display present outside the warehouse shows the count of the number of authorized people inside the warehouse.