ARJUN VINOD

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EDUCATION

Syracuse University, New York May 2017
Master of Science in Computer Engineering

Anna University, Chennai, Tamil Nadu, India May 2014
Bachelor of Engineering in Electronics & Communications

PROFESSIONAL EXPERIENCE

GreenSight
Embedded Software Engineer, UAV Systems January 2018 – Present

- Develop firmware based on ArduPilot (open-source autopilot system) flight stack and contributing work to the open-source community (C++)
- Testing firmware changes with Software in the loop (SITL) simulator and integrating with models made in Gazebo
- Integrated TI's Battery Management IC with ArduPilot and created new MAVLink messages with the battery data relayed to the Ground Control Station (GCS)
- Participate in bring-up and validation of new embedded hardware and help with prototype run
- Developed embedded applications using Python/Bash scripting, integrating sensors on SBC's (Rpi Compute model, Artik 710) using serial communication (I2C, UART, 1-Wire, SMBus)
- Knowledge of linux device tree, debian software packaging

Akrobotix
Embedded/Robotics R&D Intern June 2017 – December 2017

- Developing Ground Control Station(GCS) features for UAV's on the framework of QGroundControl on Qt
- Developing an autonomous flight system based on Px4 flight stack for indoor and BVLOS operations of Unmanned Air Vehicles in the absence of GPS.
- Conduct research, analysis, simulation and field experiments in estimation and control, guidance of UAV systems
- Designed the schematic and layout for a breakout board which converts UART signals to I2C using Eagle
- Multimodal Sensor Fusion (LIDAR, Optical flow) with Pixhawk 2 and a companion computer (Raspberry pi 3/TX1)

ACADEMIC PROJECTS

- **Code Parser with Abstract Syntax Tree**
  - Designed a Lexical Scanner in C++ which reads files and extracts words, called tokens
  - Designed Abstract Syntax Tree to analyze the code and calculate the size of a block and cyclomatic complexity.
- **Beagle Beowulf Cluster**
  - Developed a parallel computing cluster by connecting two BeagleBone Black Rev-C boards using a Gigabit Ethernet switch over a LAN using MPI for communication
  - Analyzed the execution time for both serial and parallel computation by running huge matrix multiplication using C
- **Automatic Irrigation System**
  - The main objective of this project is to increase the yield of the crop and minimize human effort.
  - Developed a C program that takes the input from the temperature and soil moisture sensor and controls the water pump depending on the input value.
  - The program also sends environmental conditions to the farmer through messages with the help of a GSM modem.

TECHNICAL PROFICIENCY

- **Languages:** C, C++, Python, Bash Scripting,, VHDL, Verilog, MATLAB
- **Operating Systems:** Windows, Linux, RTOS (NuttX, ChibiOS)
- **Software IDE/Editors:** Visual Studio, Visual Studio Code, Qt, Pycharm; Emacs, Vim, Vi, Nano

LEADERSHIP EXPERIENCE

Engineering and Computer Science – Graduate student Organization, Syracuse University September 2015-December 2016
Member

- Organized research interest meetings for the ECS department
- Raise student needs and concerns to the University administration