Adithya Selvaprithiviraj

CONTACT

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OBJECTIVE

To strive for excellence in research and carryout interdisciplinary research in an exciting intellectual environment.

EDUCATION

Bachelor of Engineering in Electrical and Electronics — June 2012 — Present

SSN College of Engineering, Chennai

Higher Secondary School — June 2011 — April 2012

JGVV Matriculation Higher secondary school,Chennai

Completed Higher Secondary School with 94 %

Senior Secondary School — June 2009 — April 2010

JGVV Matriculation Higher secondary school,Chennai

Completed Senior Secondary School with 92 %

PROJECTS

Title: Hardware Implementation of Nand2Tetris course

- Developed a soft microprocessor starting from a simple NAND gate with the help Xilinx system generator toolbox using matlab and implemented the design on Spartan 3E FPGA.
- Developed all the necessary sub-modules for programming and debugging the HACK-COMPUTER such as, the assembler, VGA interface driver, PS2 Keyboard interface driver.

Title: Mobile Robot Path Planning using A* Algorithm

- The objective of the project was to make a mobile robot move in a dynamic path and reach the goal point while performing obstacle avoidance.
- The live feed from the camera above the arena was used to process the image (operations like thresholding and dilation were performed) and generate the path using A* algorithm.
- A PID Controller was designed and implemented for reference tracking.

Title: Magnetic Levitation

- Designed a Prototype of Magnetic Levitation System.
- Implemented Hysteresis Control to achieve magnetic levitation using Spartan 3E FPGA.

Title: DSO-ART

- Implemented mathematical functions on Spartan 3E FPGA and used PWM technique to display basic shapes in a DSO.
- Developed a technique to display any given image in a DSO with the help of image processing and python.

Title: Kiduino

- Developed a library for Arduino that would help the kids learn Arduino with an simple Object Oriented approach.
- Developed classes for several Sensor modules like HC-SR04,GP2Y0A02YK0F etc.

Title: Aero-Pendulum

- Designed an Aero-Thrust Pendulum.
- Implemented PI and PID algorithm in ATMEGA328 to control the system.

WORK EXPERIENCE

Stealth flash, Ahmedabad — June 2015 — August 2015

Research Intern

- Worked as a computer vision researcher and developed several modules for 3D image manipulation using OpenNI (For RGBD sensor) and Nite (Middleware) libraries.
- Worked on 3D point cloud formation and reconstruction using laser scanning technique as well as stereo camera pair.

Adignet Systems, Chennai — December 2014 — March 2015

Research Intern

Aircraft Refueller Top-up Control and Overflow Prevention System

- Developed a system to sense the fuel level in the refueller.
- Developed a communication algorithm which helps the refueller to send the data to the filling station and prevent the overflow with several safety checks like loss of wireless communication(ZIGBEE) and alarm feature.

Ethical Intelligent Technologies, Chennai — June 2014 — August 2014

Research Intern

Hardware Design of GPS/GPRS Diesel Generator Tracking Device with RS232

- Built a Prototype Device using ATMEGA-328 micro-controller which can act as a MODBUS Master device.
- Developed a firmware to make the device communicate with Diesel generator control panel and also send the information to a cloud server(IoT).

Simple Labs, Chennai — September 2013 — October 2013

Embedded Systems Intern

RFID based access control system

- Built a simple RFID card based access control system.
- Also a DTMF based secure access system alternative was developed.

SKILLS

Languages:
Python, C++, C, HTML, JS, SHELL.

Libraries:
OpenCV, OpenNI, Beautiful Soup, Zbar, Matplotlib.

Software Tools:
VIM, GIT, ARDUINO, ENERGIA, MATLAB/XILINX, MATLAB/Simulink, PHOTOSHOP.

Embedded Hardware:
Beagle Bone Black, ATMEL ATMega/ATTiny Micro-controllers, SPARTAN 3E-FPGA, Intel Galileo SOC, TI MSP430 Micro-controllers, Primesense Carmine(RGBD camera).

ONLINE COURSES COMPLETED

Introduction to Computer Science and Programming Using Python- MIT
https://verify.edx.org/cert/8801a877243f4e9ea795a45956a2c5c0

Autonomous Navigation for Flying Robots- Technical University of Munich
https://verify.edx.org/cert/233bb294d5074587ace1b93988b3b593

VOLUNTEER EXPERIENCE

Becoming I Foundation

Project Knock Knock

Project Knock Knock bridged the gap between the economically weaker sections and the access to wholesome education for every child born in this secular country, by sensitizing people and communities about it. As volunteers we reached out to all stakeholders so the government-stipulated window of May 3rd-18th for admission under Right to Education Act is maximized.

ACHIEVEMENTS

- Won the 1st place in the event 'Rush Hour', a complex line follower robotics event organized during PRAGYAN 2015 an International level Tech Fest, conducted by NIT, Trichy.
- Won the 3rd place in the event 'Apollo 18', an image processing based robotics event organized during PRAGYAN 2015 an international level Tech Fest, conducted by NIT, Trichy.
- Won the 2nd place in the event 'Kronicles of Mars', an image processing based robotics event organized during KURUKSHETRA 2015 an international level Tech Fest, conducted by Anna University, Chennai.

LEADERSHIP ROLES

Core Member, Electrical Research Fraternity (ERF), SSNCE

- Organized workshops on Arduino and robotics.

Head of Design, Association of Electrical and Electronics Engineering(AEEE), SSNCE

- Headed a team which designed the website for the national level technical symposium Eupraxia 2015.

Student Organizer, Association of Electrical and Electronics Engineering(AEEE), SSNCE

- Organized Internet Of Things workshop using Intel Galileo for the national level technical symposium Eupraxia 2015.

Student Organizer, Association of Electrical and Electronics Engineering(AEEE), SSNCE

- Organized Arduino workshop for the national level technical symposium Eupraxia 2014.

RESEARCH INTERESTS

Artificial Intelligence, Computer Vision, Control theory, Embedded Systems, Interaction Design, Gestural Interaction, Robotics, Machine Learning.