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Summary

- Experienced Mechatronics Engineer interested in Embedded Systems and Robotics, DIY culture, Open Source Hardware, and Healthcare Applications & Devices
- Experienced in taking a project from the proof-of-concept stage to production
- Experienced in developing scalable, secure connected device solutions for the classroom environment
- Developed classroom devices that enables students achieve their socio-emotional learning goals
- Experienced in Microcontroller Programming (Atmel/Microchip), cross-platform library development for interfacing hardware to arcade games
- Implemented solutions including firmware upgrade to legacy hardware, enhanced user interface and displays for arcade games that aided to augment revenue
- Experienced technological author that has published two books with Packt, an international publisher

Skills & Interests: Mechatronics Systems, Robotics, Control systems, Product Development, Embedded System Design, Sensor Interface and Firmware Development, Image Processing (SimpleCV, OpenCV), Internet of Things (IoT), Embedded Linux Development and 3D printing

Programming skills: C, C++, Python & UNIX Shell Scripting, Matlab

Other skills: Prototype PCB bring-up, PCB design (Eagle, KiCAD), Control System Design

Work Experience:

Altschool

Embedded Systems Engineer, (May 2014 – Present)

- Developed tools for educators that tracks student behavior and identify students who require special attention. Educators use this to present evidence to parents. The tool has closed credibility gaps in documenting student behavior, helps parents and educators collaborate in improving outcomes for their wards, and presents hundreds of thousands of dollars in annual savings and revenue, and additionally serves as a great marketing tool for AltSchool's services and methodology.
- Designed an audio recording tool that records and uploads audio from various school environments. This audio is used by educators for review of classroom instruction and student behavioral issues. It is used by the School Operations Team to review best practices and safety incidents.
- Deployed over 175 audio recorders and cameras that are used for data collection in the classroom.
- Refined the performance of audio recorders and cameras to maintain data collection efficiency greater than 98%
- Schematic capture and printed circuit board design (PCB) in KiCad/Eagle for building prototypes that is used to collect data from the classroom.
- Developed Network Interfaces in Python to interact and gather data from classroom devices.
- Built 6 proof-of-concepts in 8 weeks using prototyping tools such as the Raspberry Pi and the Arduino. Two prototypes, a wireless audio recorder and RF tracker were selected to be deployed in the classroom.
- Received a "Truly Exceptional Performer" award at Altschool for Q1 (July – September), 2016

Raw Thrills

Electronic Hardware Engineer, (February 2012 – May 2014)

- Implemented cost saving solutions that enabled support of legacy games such as “Fast and Furious” on latest hardware platforms and increased profit margins by 7%
- Developed production test fixtures and software applications to run lifecycle tests on game hardware
- Developed cross-platform libraries (Windows 7 Embedded/Linux) to interface game hardware, allowing for multiple platform games to be played seamlessly on the same hardware.
- Developed firmware for auxiliary hardware including LED displays and other lighting solutions for arcade games
- Qualified new hardware for current and upcoming projects. This includes displays and parallel port cards for customers
- Customized Windows Embedded Operating System builds for new games
- Supported the production department in troubleshooting issues that arose during pilot trials of arcade games
- Developed Java Libraries for interfacing USB devices to Android TV sticks (runs Android 4.x)

Telemetric Robotics group and Autonomous Vehicles Lab, CMU (January 2011-January 2012)

- Implemented an OpenGL based vehicle path planning and data visualization layer for the autonomous vehicle user interface
- Demonstrated a network based control system software that enables navigation of two boats using waypoint information on a lake. This was a DARPA funded project

Living Environment and Urban Atmosphere Lab, Carnegie Mellon University (CMU)

Research Assistant, (Fall 2011)

- Developed a Volatile Organic Compounds monitoring gadget that was demonstrated at the White House Technology Office by Prof. Eric Paulos in 2011

Samsung Information Systems America

Summer Intern, Systems Research, (Summer 2011)

- Developed a real-time control system that performs a task using a gyroscope and a vision system and demonstrated the scalability and scheduling capabilities of Samsung's operating system to a Linux operating system

Robotic Agents Lab, (August 2010 – December 2010):

- Built a recharging arm that is used to recharge other robots and demonstrated that it is possible to recharge a robot in 25 minutes. An Arduino was used to prove the concept.

Faraday Instruments

R&D Executive (December 2009 – May 2010)

- Provided customer support for special applications using Ozone Gas Generators and Volatile Organic Compounds Monitors, Ozone Gas Concentration Monitors etc.
- Developed an Oxidation Reduction Potential (ORP) probe interface that controls the dissolved ozone concentration levels in a water storage tank.
- Developed a set-point controller for carbon dioxide gas sensor modules that controls a device based upon the CO₂ concentration levels in the surroundings.
- Offered an honorary scientist position to consult on sensing and monitoring products

Bosch Limited

Graduate Apprentice (June 2008 – October 2009)

- Trained in 6 cross functional areas of the organization including Engine Instrumentation, Testing, Quality Control, Fuel Injection Pump Manufacturing & Sales Forecast and Planning.

Publications

- Sai Yamanoor, Srihari Yamanoor, Raspberry Pi Mechatronics Projects, February 2015
- Sai Yamanoor, Srihari Yamanoor, Python Programming with Raspberry Pi Zero, April 2017

Education

M.S. Mechanical Engineering, December 2011, GPA: 3.61

Carnegie Mellon University, Pittsburgh, PA

Coursework: Data Acquisition & Control, Mechatronic Design, Sensors and Sensing, Gadgets, Feedback Control & Engineering Computation

B.E. Mechatronics Engineering, May 2008, GPA: 4.0

Anna University, India

(Class Rank: 2 / 30, University Rank: 6 / 201)

Awards

- Received an award from Anna University for ranking 6th among 201 students in the Mechatronics Engineering program
- Awarded the Best Outgoing Student of the Department of Mechatronics Engineering for the Graduating Class of the Academic Year 2007-2008