DHAVAL HARESH PARIKH

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WORK EXPERIENCE:

- **Hardware Engineer** at **Lotik** – A Samsung NEXT company **Aug 2016 – Present**
  Responsible for developing the firmware and testing the hardware for the clip-on, non-intrusive Lotik water sensors that detect leakages and monitor water consumption.
- **Firmware and OS Engineer** at **HERO** (www.herohealth.com) **July 2015 – Aug 2016**
  Wrote the firmware for HERO – A smart appliance that manages and stores vitamins and medicines.
- **Embedded Engineering Intern** at Sensing Electromagnetic Plus Corp. (www.semplus.eu) **June 2014 – April 2015**
  Interfaced the touch layer with different micro-controllers, developed and ported algorithms, improved algorithm efficiency, wrote low-level firmware and designed hardware for wearable devices and related products.
- **Embedded Engineer** at Innovative Controls, Mumbai, India. **Aug 2012 - Aug 2013**
  Developed hardware (schematics, Layouts, electrical diagrams), firmware and device drivers for the microcontrollers and Programmable Logic Controllers used in the projects.

PROJECTS:

- **The Virtual Architect** **Spring 2015**
  An application intended to revolutionize the market of Visual Merchandizing. It's an augmented reality software powered by Nvidia's Tegra K1 GPU to help visualize your dream home. Part of a team of three, worked on the core algorithm for the software and made it more efficient and uer-friendly. **Demo:** https://goo.gl/89SSVr
- **Autonomous RC car based on CAN bus** **Fall 2014**
  A self-driving RC car that can navigate to the destination chosen from Google Maps. The car has 6 controllers communicating on CAN bus and running on a real-time operating system (FreeRTOS). Part of the team of 15 students, worked on the Master, Motor and Sensor modules. **Wiki:** http://goo.gl/wzdiBr
- **Real-time Object Measurement using OpenCV** **Spring 2015**
  Developed a program to measure dimensions of objects in real-time. Used OpenCV on the Nvidia Jetson TK1 board to capture the video from a camera and perform video processing.
- **Smart Weather Clock** **Spring 2014**
  Created weather clocks with Internet of Things (IoT) functionality that can fetch real-time weather data from the internet. Part of a team of 4 worked on the 1-wire sensor, graphic LCD interface and designed the hardware.
  Wiki: http://goo.gl/Pg4C4F
- **Automatic Batching System with Remote Monitoring** **Fall 2013**
  Designed an automatic oxide batching system with remote monitoring capabilities. Part of a team of 2, wrote the algorithm and the firmware for the system and designed the hardware.
- **Power Line Communication Using MODBUS protocol** **May 2012**
  Wrote the firmware and designed the PCB to implement the transmission and reception of data through the AC Mains using ST7538Q transceiver. **Demo:** http://goo.gl/s0ejEF
- **Space-vector control of low voltage AC motor.**
  Led a team of 2 and implemented the space vector algorithm to control low voltage industrial AC motors. Worked on the firmware and also designed a rapid-prototype board for testing.
- **MODBUS RTU based weighing controllers and remote displays.**
  Implemented the MODBUS communication protocol and modified the existing hardware of the remote displays to make them capable of interfacing with standard industrial MODBUS supporting devices.

EDUCATIONAL QUALIFICATION:

- **M.S, Computer Engineering**, San Jose State University, CA. **GPA: 3.9/4** **May 2015**
- **B.E, Electronics Engineering**, University of Mumbai, India **May 2012**

TECHNICAL SKILLS:

- **Programming Languages**: C, C++, Python , Visual C#, Swift (basic), Verilog, Ladder and Instruction List (for PLC)
- **Communication Protocols**: LoRa, ANT+, CAN, SPI, I2C, UART, MODBUS, PCI, 1-wire.
- **Micro-controller platforms:** STM32, LPC1758, dsPIC33, PIC18F, Atmel AVR.
- **EDA software tools**: Altium Designer 10, Eagle, Cadence SigXplorer, ORCAD 9.2

  Other: FreeRTOS, Firmware for ARM Cortex-M3/M4/M7 devices, GPU and CUDA programming, OpenCV, Git, Human Machine Interface (HMI) programming, AC drives, DC drives. Proficient with Logic Analyzer, Oscilloscope, Soldering and Rapid-Prototyping.