Darsh Shah

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Work Experience

Jun, 12 – Ongoing — **Qualcomm Inc, India**
Working as an Associate Engineer in field of Computer Vision. Developing APIs and test automation suite to test the FCV APIs on hardware.

Jan, 12 - May, 12 — **Playpower Labs, India**
Interned at a startup company in Gandhinagar as a game developer and designer. Made educational games in flash for school children. One of the games is hosted at http://goo.gl/q6wSM

Aug, 11 – Dec, 11 — **Research Assistant**, Embedded Systems & Sensor Networks Research Group, DA-IICT
Worked on Wireless Optical Sensor Network Design for a Conducting Chamber. Researched about methodologies to improve communication using Infrared. Made prototypes on custom PCB for the developed designs and did alpha testing in the lab.

Education

2008-12 — Dhirubhai Ambani Institute of Information and Communication Technology, Gandhinagar (Gujarat, India)
B.Tech in Information and Communication Technology
CPI 8.83/10

2007-08 — St. Kabir High School, Ahmedabad (Gujarat)
Gujarat Secondary Education Board
87.00 % (aggregate)

2005-06 — St. Kabir High School, Ahmedabad (Gujarat)
Gujarat Secondary Education Board
89.86 % (aggregate)

Skills

Expertise Area — Embedded System, Wireless Sensor Networks, Digital System Architecture, Computer Networks.

Programming Language — C, C++, Verilog, Perl, Embedded C for AVR, SQL, Assembly language for 6502, Actionscript 3.0, NesC and Contiki (Beginner level)

Tools: Software — AVR Studio, WinAvr, Xilinx, Matlab, Logisim, Multisim, Labview, NS2, Eagle, Adobe Flash

Tools: Hardware — Spartan 3 FPGA, ATmega16/32, Basic Stamp2, Lego Mindstrom Nxt, Arduino, Raspberry Pi, STK500 and Fablab tools including Laser cutter, Shopbot and Modela

Technical Electives — Embedded System Programming, Digital System Architecture, Wireless Sensor Networks, Network Protocols, Robotics, Embedded Hardware Design, Digital Signal Processing, Digital Image Processing.

Internships

Rural Internship — **Hadoti Natural Society** — Dec, 09
Guide: Professor Ganesh Devy and Mr. Rakesh Vyas — Team Size – 4
We worked in rural areas of Kota district, visiting different villages and working on human – crocodile conflict and its amelioration measures.

Research Internship — **Playpower Foundation, Carnegie Mellon University, USA** — Feb,10 – Sep,10
Guide: Derek Lamos(CMU), Prof. Mathew Kam(CMU) — Team Size – 12
I coded for 6502 processor which was used in the video games. We made 3 games and were tested in Ahmedabad, Bengaluru and Mumbai.

Research Internship — **Wireless Optical Sensor Network Design for a Conducting Chamber** — May,11–July,11
Team Size – 2
Guide: Prof. Prabhat Ranjan
Sensor Network Testbed for Tokamak Environment using IR instead of RF for Nuclear Reactor. It is supported by National Fusion Program, Board of Research in Fusion Science. I continued as a RA on this project from Aug,11

Publications

"Improved Speed IR Communication based Sensor Network for Tokamak In-Vessel Monitoring" - **Darsh Shah**, Vedang Patel, Abhishek Borkar and Prabhat Ranjan to 26th National Symposium on Plasma Science & Technology (PLASMA-2011), December 20-23, 2011,Patna, India.

"Play Exemplars from Playpower.org" - Derek Lomas, Kishan Patel, Dheeraj Medikonda, **Darsh Shah**, Yash Soni, Anshul Pahwa, Dixie Ching at International Academic Conference on Meaningful play, October 21-23, 2010, Michigan State University, East Lansing, Michigan, USA.

Patent

Applied for patent at Patent and Trademark office, Mumbai for an invention titled "A Novel Standalone Printer Add-On Device and System". Application number: **2753/MUM/2011**.

Major Projects

FastCV — Jun, 12 - ongoing
Organisation - Qualcomm, Inc — Team Size – 1
Working on a Computer Vision library called FastCV. The SDK can be downloaded from http://bit.ly/Qi4X1S. I am working on making test APIs for this library and also making an automation suite using Perl to test these APIs on different targets. I am doing memory testing, Bullseye testing, API fuzzing as a part of the testing effort.

smarT: A smart and interactive t-shirt for specially abled people — Mar, 12
Team Size – 4
Guide: Nanwei Gong and Nan Zhao, MIT Media Lab, MA, USA
Made a prototype of a t-shirt which has a LED panel in front for displaying information on the shirt. The final idea is to read gestures using camera and display text on the LED panel.

OpticalCENSE: Making a Wireless Sensor Network for a Conducting Camber — Jan,11 – Dec,11
Guide: Prof. Prabhat Ranjan, DA-IICT — Team Size – 2
This funded project was started in Jan and I worked on it also during my Research Internship and became a Research Assistant for the same during the 7th sem. Designed the PCB, did unit testing of the components and alpha testing.

SeismicCENSE: Interfacing Zigbit with ADS1255 (24-bit ADC) — Feb,11 – Apr,11
Guide: Prof. Prabhat Ranjan, DA-IICT — Team Size - 2
The aim of this project was to interface Zigbit with a high resolution Analog to Digital convertor to measure the seismic activity on Moon and relay the information to base station.

Computation of 4 Point DFT using Radix2 FFT Algorithm on FPGA — Oct,10 – Nov,10
Guide: Prof. Rahul Dubey, DA-IICT — Team Size-5

Implemented the FFT algorithm on the FPGA, taking the inputs from oscilloscope and giving output on LEDs. The butterfly algorithm was used and was coded in Verilog.

CONNECT2LEARN: An Interactive Virtual Classroom Jan,11 – Apr,11
Guide: Prof. Asim Banerjee, DA-IICT Team Size – 10
As a part of software engineering course, we are making a virtual classroom using Java. It is an open-source project. The virtual classroom project aims at connecting students to teachers via internet.

Automatic Mail Detecting Postbox Nov, 10
Guide: Prof. Anil Roy, DA-IICT and Prof. Anil Gupta, IIM-A Team Size-1
Made a Automatic Mail Detector Postbox for National Innovation Foundation and was displayed at Ignite 2010 awards held at IIM-A. The postbox detected any mail which was dropped in the box using IR sensors and intimated the user for the same.

KEYS2DOTS: Braille Printer Jan, 11
Guide: Ken Endo and Nadya Peek, MIT Media Labs, MA, USA Team Size-5
Made a working prototype of a printer which converted keyboard strokes into corresponding braille letter and prints them on paper. This project was done as a part of MIT-COEP Design Innovation Workshop 2011.

NI ELVIS II Jun, 09
Guide: Prof. Rahul Dubey, DA-IICT Team Size-4
Testing of National Instrument's ELVIS II platform. We developed a report on the various experiments that can be conducted on it and also basic features provided by it.

Positions of Responsibility

- **Research Assistant**, BRFST sponsored project in WSN Aug,11 – Dec,11
- Part-time **Teaching Assistant** for Embedded Hardware Design course. July, 11 – Aug,11
- **Secretary**, IEEE Student Branch, DA-IICT Feb,11 – Dec,11
- Publicity Manager, IEEE Student Branch, DA-IICT Mar,10 – Feb,11
- Event organizer of a One day workshop on Matlab Apr,10

Awards and Achievements

- Was selected for **MIT Media Lab**'s Design and Innovation Workshop which was held in Pune in 2011 and Delhi in 2012.
- Consolation prize for our design of Automatic Water Dispenser in Re-Kriti held during Synapse 2009.
- 2nd place in CEID Entrepreneurship contest held at DA-IICT in 2008.

Interests and Hobbies

Playing basketball and soccer. Learning new things, playing with gadgets and tinkering with hardware in my mini-lab. I write about things which I do and love @http://blog.darshshah.org/

Declaration: The above information is correct to the best of my knowledge.
Darsh Shah
Oct. 11, 2012