SIDDHARTH SHARMA

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EDUCATION

University of Delhi, Netaji Subhas Institute of Technology (NSIT) *June 2014*
Bachelor of Engineering
Division of Instrumentation and Control Engineering

Overall Percentage: 62.48 %
(after dropping 12 credits as per provision of University of Delhi): 62.89 %

Bachelor's Thesis Project – Implementing Speaker Recognition Using Student's t-Mixture Modeling
BTP Score: 80.00%

TECHNICAL SKILLS

Programming	C/C++, Python, MATLAB, VHDL, Processing, LaTeX
Software Tools	Eagle CAD, PSpice, Cadence Virtuoso, LabVIEW
Hardware	Arduino, RaspberryPi, Atmel AVR, ARM Cortex M3 (with TI StellarisWare), PCB Design, Oscilloscopes
Operating Systems	Linux (Ubuntu and Raspbian), Windows

INTERNSHIPS AND RESEARCH POSITIONS

Viterbi School of Engineering, University of Southern California June 2013–August 2013
Summer Research Intern *Los Angeles, CA*

- Worked in the BioRC research group led by Dr. Alice C. Parker in the Ming Hsieh Department of Electrical Engineering; the research group targets to mimic the human brain's neural structure through analog VLSI circuits
- Developed software and algorithms to automate the synthesis of analog neural network circuits, to mimic the neural structure of C.Elegans worm
- Presented poster titled "Automatic Neuromorphic Circuit Connection Software" at Ming Hsieh Department of Electrical Engineeng

mLabs Research September 2012–May 2013
Research Intern *New Delhi, IN*

- Designed Arduino and RaspberryPi-based circuits, integrating devices like TFT touch display, 802.11 module, ADCs and analog switch matrix microchips by employing bus communication protocols such as SPI and I2C
- Designed multi-layer PCBs using EagleCAD
- Developed modules for memristor characterization using Arduino
- Worked in the three-member prototype development team of Bit-by-Bit (B3) – a product that enables everyone to design Internet of Things enabled hardware; B3 provides a fully automated data acquisition and analysis system, along with an arbitrary waveform generator, using a RaspberryPi based board; the concept is patented and supported by Microsoft Ventures in London

Centre for Electronics Design and Technology, NSIT December 2011–July 2012
Student Researcher *New Delhi, IN*

- Learned PCB design and fabrication
- Worked on various Arduino-based hardware projects (please see "Projects Undertaken")

Bosch Chassis Systems, Gurgaon Plant June 2011–July 2011
Summer Trainee *New Delhi, IN*

- Worked on project titled "Implementation of Poka-Yoke Using Electronic Sensors" – design and implementation of a PLC panel for Poka-Yoke on riveting machine in the drum-brake house of the manufacturing plant
- Review paper about the project won First Position at Kriti – Paper Presentation Competition during Innovision 2012, the annual technical fest of Netaji Subhas Institute of Technology
- Learned about the various manufacturing processes employed in the plant, various quality assurance techniques such as Poka-Yoke and Six-Sigma, and how they are employed in the manufacturing plant

PROJECTS UNDERTAKEN

Solar Position Algorithm (SPA) on RaspberryPi August 2014
Mentor: Dr. Smriti Srivastava, Dean, Undergraduate Studies, NSIT

- Designed the PCB for a standalone RaspberryPi-based device for the implementation of SPA developed by NREL, US Department of Energy; the device makes SPA calculations, such as solar zenith angle and azimuth angle, at remote locations

Bachelor's Thesis Project: Implementing speaker recognition using Student's t-Mixture Model
Mentor: Dr. Smriti Srivastava, Dean, Undergraduate Studies, NSIT *January 2014–June 2014*

- Developed a robust, text independent speaker recognition system modelled on Student's t-mixtures. Defended thesis in front of panel comprising of faculty members of Division of Instrumentation and Control Engineering, NSIT

"Pac–Man" on Digital Storage Oscilloscope July 2012
Laboratory: CEDT, NSIT

- Developed single player "Pac-Man" on a Digital Storage Oscilloscope (DSO) as part of Atmel Oscilloscope Design Challenge, CEDT, NSIT, New Delhi
- Established graphic display in X-Y mode of DSO using two R-2R ladder network based digital to analog converters, and gameplay through a basic controller interfaced using Arduino

Non-Invasive Heart Rate Monitor April 2012–June 2012
Laboratory: CEDT, NSIT

- Developed the heart-rate monitor using IR sensor by employing the principles of Plethysmography; displayed ECG graph using Processing

"Snake" game on an 8x8 LED Matrix March 2012
Laboratory: CEDT, NSIT

- Developed the game "Snake", played through a basic controller interfaced with Arduino

PCB Design and Fabrication December 2011
Laboratory: CEDT, NSIT

- Designed and fabricated the PCB for a 5VDC voltage-regulated power supply with maximum current drive of 1A using Eagle CAD software
- Provided fold-back current limiting for short-circuit protection

LEADERSHIP EXPERIENCE

Crescendo – Music Society of NSIT June 2012–May 2013
President

- Previously an inactive society, brought significant improvement in activity and presence by appointing an administrative core team of 6 members, out of a total of over 50 members in the society
- Successful organization of Crescendo Eve in September 2012, with 15 musical performances of varied genres by society members; Crescendo Eve is now an annual event at NSIT
- Successful stint at Rendezvous 2013, Annual Cultural Fest of IIT,Delhi, with 2nd position in Solo Western Vocals, 3rd position in Solo Instrumentals and participation in Group Western Vocals

EXTRA-CURRICULAR ACTIVITIES

- Playing the bass guitar; familiar with musical staff notation
- Member of college basketball team during first two years of college