Curriculum Vitae

Abhishek Sharma

Junior Undergraduate
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Professional Goal — MS and PhD in Embedded Systems or Robotics and to help people especially in the developing nations with socially-relevant research

Research Interests — Embedded Systems, Robot Vision, Autonomous Robotics

Contact Details
Hostel No.12, Room No.364
Birla Institute of Technology, Mesra
Ranchi-835215
Jharkhand
India

Personal Details
DOB : 30th August, 1988
Gender : Male

Education

Little Flower School, Jamshedpur, India

- ICSE – 96.4% [Subjects – Science, Mathematics, Computer Science, English, Social Studies]
- ISC – 90.0% [Subjects – Physics, Chemistry, Mathematics, Computer Science, English]

Birla Institute of Technology, Mesra, Ranchi, India

- (Absolute Point)[1] CGPA : 7.37/10
- *Fifth Semester*, Faculty of Electrical and Electronics Engineering

Relevant Academic Honors

- School Rank 1 in ICSE, (School Leaving exam)
- Top 5 in school, ISC, (Higher Secondary exam)
- All India Rank-6915 at IIT-JEE 2007 out of over 0.3 million students (top 2%)

Ex (Excellent) grade awarded for courses :
Unix and C Programming (Semester 1)
Data Structures in C++ Lab (Semester 2)
Programming in MATLAB (Semester 3)

Academic Projects

❖ ***Hierarchal Facial Expression Recognition System using Active Appearance Models(AAMs)***

May – July 2009

- The project dealt with use of AAM for expression recognition with subsidiary focus on gender and age estimation. A subtle change to existing techniques has been proposed by the author, to achieve more robust classification. The detailed technical report is available with the author. **The work presented at an IEEE Robotics and Automation Society's International Workshop/Conference - Advanced Robotics and Its' Social Impacts, November 23rd – 25th 2009, Tokyo, Japan.**
- *Guides:* Prof. Gross and Mr. Ronny Stricker

❖ ***Embedded System implementation of a facial expression recognition system – Bachelor Thesis Project***

2009 (in progress)

- Project is in progress. Aims at implementing the Active Appearance model framework for face expression, age and gender detection. Target to develop an intelligent wheelchair.
- *Guide*: Prof. R. Sukesh Kumar, Head of Department, Computer Science and Engineering, BIT , Mesra, India

❖ ***A Microcontroller based control firing circuit for a Boost DC- AC Inverter for 120 ° mode of operation***

2010

- *Guide: Prof. Ritesh Keshri, Electrical and Electronics Engineering, BIT Mesra*

[1] BIT Mesra, India follows an absolute point grading system, which is different from the relative CGPA system. In this system there is no relative marking. Therefore, there might not be any student in the course who has 10/10 or 9/10 and the topper of the course may have, for example a CGPA of 8.2/10.

❖ ***Use of Swarmbot intelligence in detection of defects in High Tension Electrical Wires***

2009(in progress)

- Project is still in progress. On completion, the system will be able to use line crawling robots using Swarm intelligence, to detect defects in high tension electrical wires. Work being done in a team of 8 members . Guides: Prof. Mustafi and Prof. K.S. Patnaik, Computer Science and Engineering, BIT, Mesra, India

❖ ***Project entitled DEHDEP (Developers' Easy HTML Development and Encryption Pad) selected for National Science Fair - INTEL Science Talent Discovery Fair, IIIT, Hyderabad, India***

2004

- Student Project in 10th year of school
- Project was a software which could be used to develop web pages and encrypt data and images. Had developed an algorithm to encrypt data. The algorithm was not up to the mark and hence did qualify for the INTEL ISEF (International Science and Engineering Fair by INTEL, USA)

Speech/Voice Controlled Robot

2005

- Project used Microsoft Speech Recognition Module interfaced with Visual Basic 6 Application. Application received user input through a microphone and according to the commands input would drive the robot, interfaced using the Parallel Port of the computer.

Designed a Line Follower Robot using a microcontroller

2007

- Project included learning how to program and interface the AVR Series, ATMega 16 microcontroller. Robot used four LED-LDR pairs for sensing the line.

Line follower robot which uses edge detection/image processing to follow the line

2008

- MATLAB used for the image processing program. Interfaced via the Parallel Port. CMOS Camera used for image capture by the robot.

Publication (International)

Abhishek Sharma, Ronny Stricker; "A Hierarchical Approach to Facial Expression Recognition using Active Appearance Models for Service Robots," In Proceedings of the **5th IEEE International Workshop on Advanced Robotics and its Social Impacts (ARSO 2009), Tokyo, Japan, November 23rd-25th, 2009 (selected, in press IEEE xPlore)**

Relevant Achievements

Winner or podium finish at several intra and inter-university programming and hardware design contests	2007-2009
National Science Olympiad, Round 2 Scholar	2004
Participated in ACM ICPC Asia Regional at Kanpur,India, Prelim Rounds (Team BITCeek)	2008
IIT-JEE 2007 Qualified, All India Rank 6915 (Admission test to Indian Institutes of Technology)	2007

Technical Knowledge/Skills Possessed:

- Strong fundamentals in algorithm based programming.
- Analog and Digital Electronics
- Programming and interfacing of the AVR ATMega 16/32 microcontroller, Intel 8085 Microprocessor
- Image Processing
- Texas Instrument DSK TMSC3206713, and an image grabber daughter card by Bitec Ltd. named DSKEye.
- Knowledge of the following languages/technologies/software tools:
  C++/ C, VB**, MATLAB, Verilog, XML, OpenCV,** MultiSim 9**,** PHP, MySQL, JavaScript**, LaTeX**,HTML

Current Activity (March 2010)	Working on statistical models for robust classification of human face expressions, age and gender estimation. Also working on a mini-project for microcontroller based firing circuit for Boost DC-AC Inverter for 120° mode of operation
Technical Societies	▪ IEEE Student Member ▪ ACM Student Member ▪ IET (Institute Of Engineering and Technology, UK)

DECLARATION: I hereby declare that the above details are best to my knowledge and belief.
March 2010

Abhishek Sharma