## Purnendu Kushwaha 07EC1033



ACADEMIC QUALIFICATIONS				
Examination	Year	Board/ University	% / CGPA	
B.Tech(Hons.), Electronics & Electrical Communication	2011	IIT Kharagpur	7.56	
Class XII, CBSE	2007	Aklank Public School, Kota	89.4	
Class X, CBSE	2005	Nirmala Convent High School, Renukoot	93.4	

#### **ACADEMIC DISTINCTIONS**

# Competitive Exams

- All India Rank 550 (top 0.15%) in IIT-JEE examination among 350,000 candidates, 2007.
- All India Rank 1119(top 0.18%), in AIEEE examination among 600,000 candidates, 2007.
- Score of **412/450** in **BITSAT**, among the **top 70** scores, 2007.
- All India Rank 1, Vikas National Talent Search Examination, among students from 200 schools, 2005.
- All India Rank 78 in National Science Talent Search Examination, conducted by Unified Council, 2007.
- 1<sup>st</sup> position in 8Mile, autonomous guided traffic controlled vehicle in Robotix, Kshitij, 2009.

## Co-curricular Achievements

- Best Algorithm in FramED, Number Plate recognition of Speeding Vehicles in Robotix, Kshitij, 2009.
- Member of the Image Processing team in India's first ever Robocup Challenge, India, 2009.
- Presented a talk on Energy Efficient Clustering in WSN's at ADCOM in IISc Bangalore as a part of Prof. Raja Dutta's research group, December 2009.

#### WORK EXPERIENCE/INTERNSHIP

Project Intern
Headless Imaging, Virtualization

IBM

May- July '10

- Worked in a group of 2 and achieved Headless Imaging of IBM's db2 and Tivoli Asset Manager i.e. deployment of running version of the software from one machine to another using a Filewatcher API in Java and Shell scripting techniques.
- No installation file was required hence the time of installation was saved and hard disk space requirement was decreased by 80%.

#### Student Intern

### Morphing Machines, Indian Institute of Sciences, Bangalore

Dec '09

Transaction Level Modelling of Reconfigurable Hardware "Redefine" with ARM microcontroller

- Configuration and interfacing of the reconfigurable hardware redefine with an ARM microcontroller using Power PC simulator was
  achieved within a short span of 4 weeks under the supervision of Prof. S.K. Nandy and his research group.
- Used the concept of DMA (Direct Memory Access) for reducing the delay and enhancement in speed of instruction execution by 40%.

#### Student Intern

#### Bhabha Atomic Research Centre, Mumbai

May-July '09

Kinetic Modelling of Robots: Modelling, control and 3D simulation

- Modelling, control and 3D simulation of 5 robots used in nuclear research in BARC namely, Articulated arm, Prismatic arm, cylinder scan, wall arm and inverted articulated robot under the supervision of Prof. J.K. Mukhopadhayay and his research group.
- All the 5 robots were tested and accurate measurements were taken in real time environment in a short span of 2 months.

#### **POSITIONS OF RESPONSIBILITY**

Marketing Consultant, Instibuzz.com	June 09- Nov 09	<ul> <li>Web based start-up by students and alums of IIM Ahmedabad.</li> <li>Introduced concept of Newsletter, Gyan board and sms applications in the site.</li> <li>Promotion of the website inside IIT Kharagpur in a team of 4 under mentorship.</li> </ul>
Head, Winter Workshop on Robotics, Technology Robotix Society	December 2008	<ul> <li>Lead a group of 8 first year students and 2 second year students with the successful completion and demonstration of Image processing robot in 7 days.</li> <li>Took introductory sessions on Robotics during the workshop.</li> </ul>
Head, Kharagpur Robotics & Artificial Intelligence Group(KRAIG)	July 2008- present	<ul> <li>Participated and won robotics events in Robotix, Kshitij.</li> <li>Mentor of two teams of second year students, when myself in 3<sup>rd</sup> year for the development of image processing robots, of which one bagged the second place.</li> </ul>
Social and Cultural Committee Member, LLR Hall	July 2008- April 2009	<ul> <li>Elected unanimously by 103 students for the post.</li> <li>Organization of Hostel events like Illumination, Saraswati Puja, Hall Day, Vortex (dance competition) and events for Social and Cultural General Championship.</li> </ul>

#### **ACADEMIC PROJECTS**

## **B. Tech Project**

July 2010-present(ongoing)

## Development of SWAN(State Wide Area Network) & Survivability of Networks

- Devising the core layout of SWAN covering all the major cities and towns of a state and reaching rural areas with an economical and efficient plan with minimum power requirement and optimum bandwidth allocation.
- Formulating methods of preventing network failure and data loss and ensuring survivability of networks.

#### **Term Project on Soft Computing**

July-Nov 2009

- Fuzzy Image Filter, Image Inpainting and image search using Genetic Algorithms were designed using MATLAB.
- Worked in a group of 6 people from different engineering departments.
- The project was judged 2<sup>nd</sup> best from among 24 other projects on Soft Computing Applications.

## **EXTRA CIRRICULAR ACTIVITIES**

- Member of Athletics General Championship winning Hostel team in Shot-put, Discuss and Hammer throw, 2008.
- Member of Inter Hall Weightlifting team for three consecutive years, 2008, 2009 and 2010.
  - Member of National Sports Organisation, Athletics for the years 2007 and 2008.
  - Gold medallist and Bronze medallist in Shot-put and discuss throw in Class Xth.
  - Member of Hardware Exhibition & Product Design team of LLR Hall, winner of Technology General Championship 09-10.

## Technical

Sports

Development of autonomous robots for line following, object following and obstacle detection.