Puneet Jain

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Education

Indraprastha Institute of Information Technology, Delhi (IIIT-Delhi) **CGPA 9.0/10.0**
Bachelors of Technology (with Honours), Electronics and Communication Department Rank: 1

Awards

- IIIT Delhi's **Dean's list** for Academic Excellence in the term 2015-16.
- Summer School for IoT organised by Microsoft Research, Bangalore and IISc Bangalore: **Hackathon 3rd position**
- IIIT Delhi Research Showcase 2015: **Hardware Hackathon Winner**

Publications

- Rohan Tiwari, **Puneet Jain**, Sujit Baliyarasimhuni, Sachit Butail and Michael Goodrich, "*Effect of Leader Placement on Robotic Swarm Control*", accepted as a full paper in the Proceedings of the 16th International Conference on Autonomous Agents and Multiagent Systems (AAMAS2017) [*Acceptance Rate 26%*] [pdf]
[Received AICTE-INAE Travel Grant]

- Nipun Batra, Manoj Gulati, **Puneet Jain** , Kamin Whitehouse, and Amarjeet Singh, *"Bits and Watts: Improving energy disaggregation performance using power line communication modems"* , presented as short (poster) paper at the 1st ACM International Conference on Embedded Systems For Energy-Efficient Buildings (BuildSys' 2014), held in Memphis, USA on 5-6 November, 2014 (Also accepted for presentation in Microsoft Techvista'15) [pdf]

Projects

B.Tech Thesis: Frequency Response Analysis of Mosquito Swarming Behaviour

Built a laboratory microcosm at the National Institute of Malaria Research for studying mosquito swarming behaviour. Developed experimental setup for system identification of insect swarming over a marker. Performed frequency domain analysis of marker following behaviour using control-theoretic methods. [Won second prize in demo presentation at IIIT-Delhi Research Showcase.] [Report] **Advisors:** Dr. Sachit Butail, Dr. P.B. Sujit

Low power device for Snow Petrel's nest in Antarctica

Device used for detecting temperature in the nests of Snow Petrels (birds found in Antarctica) and their foraging patterns, using Arduino Pro Mini board, temperature and light sensors and a 3D printed enclosure.

Audio localisation using ENF Signatures

Worked on using the ENF signatures embedded within audio recordings for forensic purpose, as part of Signal Processing Cup 2016. [Report]

Waypoint navigation for Autonomous Rickshaw

Steering and throttle control using PixHawk GPS and drive-by wire on an autonomous rickshaw to follow given waypoints. Extending to integrate LIDAR and vision for lane following and obstacle detection.

Internships

Research & Development Intern, Zenatix **Advisor:** Dr. Amarjeet Singh
Worked on hardware and firmware design of nRF (radio) based low power temperature sensing device.

Research Intern, Emergent and Autonomous Systems Lab, IIIT Delhi **Advisor:** Dr. Sachit Butail
Worked on analysing the collective behaviour in pill bugs by processing data for varying density of Pill bugs moving in an annular region.

Research Intern, Energy Lab, IIIT Delhi
Studied approaches for Non Intrusive Load Monitoring, including Electromagnetic Interference from SMPS devices and data rate of PLC Modems.

Community Work

I taught Math, Science and Music to orphan girls aged 8 - 15 and Math and English to high school girls, associating with the NGO - Udayan Care.

Skills

Languages & Tools: MATLAB, Python, C, C++, ROS, EagleCAD, SPICE, Verilog, Cadence, SketchUp, 3D Printing
Hardware: Arduino, RaspberryPi, Intel Galileo, ESP WIFi boards, nRF (Nordic) radio, Emlid RTK GPS, 3DR Radio

Positions Held

- **Teaching Assistant**
  - *Embedded Logic Design* in Monsoon 2015
  - *Digital VLSI Design* for Monsoon 2016
  - *Introduction to Robotics* for Winter 2017
- Mentor for 10 undergraduate first year students during my senior year.
- Member of Student Senate — Student body associated with academics in the institute, 2015-16
- Organising committee: Tech-fest 2016, Cultural fest 2017, Event teams: Tech-fest and Cultural fest [2013-2015].

Extra-Curricular Activities

I play basketball and keyboard and have represented my college and school for the same.