Pranav Kedia

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ACADEMIC DETAILS

University	Year	CGPA/Percentage
International Institute of Information Technology,Bangalore (IIIT-B)	2015-Pursuing	3.21/4.00
Modern Vidya Niketan Sr. Sec. School, Faridabad	2013-2015	91.4 %
Modern School, Faridabad	2000-2013	10.0/10.0

KEY PROJECTS

- **Design and Development of swarm robotics platform**
  (Guide: Prof. Madhav Rao, Aug'18 - Till Date)
  - Investigations into the working of swarms in nature (eg: army ants, weaver ants, school of fishes and even cells in a multicellular organism). Designing and developing bio-inspired Swarm robotics platform artificially imitating these natural processes of communication and coordination among group of robots.
- **Design and development of an autonomous emergency vigilance system for passenger vehicle**
  (Guide: Prof. Madhav Rao, Jan'18 - Till Date)
  - An automotive enabled integrated sensory system is designed to identify physical discomfort of the passenger travelling in the public transportation system. The sensory system is designed to connect with the emergency response team for any immediate action.
- **Design and Development of an Automated Solar Tiller**
  (Guide: Prof. Madhav Rao , Jun'17 - May'18)
  - Designed and developed an autonomous solar powered field tiller using image processing and magnetic encoders to solve simultaneous localization and mapping(SLAM) problem.
    More Info: https://goo.gl/brkM9U
- **Beowulf cluster of 15 Raspberry pi**
  (Guide: Prof. Madhav Rao, Jun'17 - Jul'17)
  - Distributed computing applications of Beowulf cluster of Raspberry pi using Message Passing Interface to estimate timing data with various no. of nodes and networking bottlenecks. More Info: https://goo.gl/CAxqws
- **C.M.O.W.C (Cross Platform, Multi Utility, On board, Wearable, Controller)**
  (Nov'16-Feb'17)
  - Developed a hand based controller for various peripherals like mouse and keyboard through hand gesture and movement with applications in fields of VR and to help disabled people to communicate with others and is an easy interface to technology. More Info: https://goo.gl/YrJeaL

TECHNICAL SKILLS

Languages	C, C++, Python, MATLAB, Assembly(ARM), Java(basic)
Scripting Languages	Python, Linux Shell
Software Tools	ROS (Robot Operating System), OpenCV, freeRTOS, KEIL, GNU Octave, GNU Make, Open MPI, Vim
Design Software Tools	Fusion360, Inkscape, Solidworks(basic), KICAD, Autdesk Eagle
Simulation Tools	Gazebo, V-REP, Netlogo, LTspice, Multisim
Embedded Development Platforms	ARM CORTEX M4, STM32F4, MSP430, MSP430, Raspberry Pi, BeagleBone, ATmega328 Arduino
Operating Systems	Linux (Ubuntu, Manjaro), Windows
Miscellaneous	CAD, 3D Printing(Creality, Ultimaker and Makerbot)

WORK EXPERIENCE

- **Indian Institute of Technology, Bombay** *(Research Intern, May'19 - Jul'19)*
  - I worked at the A.R.M.S. Lab at Inter Disciplinary Program in Systems and Control Engineering under Dr. Arpita Sinha. My work involved simulation of swarm behaviour in a swarm collective of Kilobot robots.

- **Haryana Police** *(Research Intern, Jun'16 - Jul'16)*
  - My work at the Commissionerate involved looking over the available infrastructure and developing low-cost crime mapping and analysis software solutions for the Law enforcement agency.

PUBLICATIONS

- **Design and development of an autonomous emergency vigilance system for passenger vehicle**
  (Co-Authored with: Pranav Aggarwal and Dr. Madhav Rao, 2019 IEEE International Conference on Vehicular Electronics and Safety (ICVES'2019), Accepted)

- **Crime mapping and analysis using GIS: an Indian perspective**
  (Co-Authored with: Dr. Hanif Qureshi and Mr. Aman Yadav , Under Submission, DOI: 10.13140/RG.2.2.11064.14081)

POSITIONS OF RESPONSIBILITY

- **Trainer and Deputy Head, Enigma** {College Robotics Club} *(Jan'17 - till date)*
  - Co-Founder of college robotics club.
  - Served as Finance Manager and Trainer, have conducted workshops "Arduino, Microcontrollers, Inter Device Communication" which was attended by a total of 40-50 students.

- **Campus Ambassador, Pravega IISc Cultural Fest** *(Dec'16 - Jan'17)*
  - Campus Ambassador for Indian Institute of Science Annual Cultural Fest Pravega.

KEY COURSES

Robotics	Control Theory, Introduction to Robotics, Reading Elective: Robotics and Feedback Control Systems, Multi-Agent Systems
Embedded Systems	Computer Architecture, Operating System, Microprocessors and Microcontrollers, Virtual Machines, Device Driver Development Advance ARM Architecture, Real Time Operating System
Data Sciences	Machine Learning
Network and communication	Computer Networks, Principles of Communication, Digital Communication, Internet of Things
Analog Systems design	Basic Electronics, Electronic Devices and Circuit Theory, Analog Circuits and Systems
Signal Processing	Signals and Systems, Digital Signal Processing, Image Analysis, Speech Processing