PATAN MANSOOR BASHA

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Amarjyothi Layout, Domlur, Bangalore, India, 560071

LINKEDIN | PORTFOLIO | GITHUB

EXPERIENCE

Software Development Engineer – Intel Security [Mcafee]
EGL Business Park, Domlur, Bangalore, India — Sept 2015 – present
- *Application Development - Embedded Sytems & IoT*
- *C, Python, Shell script, Network Security*

Summer Research Fellow - Indian Academy of Sciences
Dept. of CS, Dayalbagh Educational Institute, Agra, India — Jul 2014 - Aug 2014
- *Neuroelectronics, Optogenetics*

Summer Intern - Electronics Corporation of India Limited
Computer Education Division, Hyderabad, India — May 2014 - Jun 2014
- *Embedded Systems & Robotics*

EDUCATION

Machine Learning Engineer Nano Degree — Nov 2016 - present
Online Course @ Udacity

Deep Learning Nano Degree Foundation — Jan 2017 - May 2017
Online Course @ Udacity

Rajiv Gandhi University of Knowledge Technologies (PUC [2] + UG [4])
R.K. Valley, YSR district, Andhra Pradesh, India

Bachelors of Technology — Jul 2011- May 2015
Electronics and Communication Engineering
CGPA: 9.51/10 | Rank: 1/75

Pre-University Course (Class XII) - *MBiPC* — Sep 2009 - May 2011
CGPA: 9.84/10 | Rank: 1/50

www.rgukt.in

Balaji Residential High School, Jammalamadugu, YSR district, Andhra Pradesh, India
Class X *(SSC- AP State Board)* — Jun 2004 – Mar 2009
Aggregate: 97% | Rank: 1/70 | State 9th Rank

NANODEGREE PROJECTS

FACE GENERATION [Link]	May 2017
LANGUAGE TRANSLATION [Link]	Apr 2017
TV SCRIPT GENERATION [Link]	Mar 2017
IMAGE CLASSIFICATION [Link]	Feb 2017
BIKE RENTAL PREDICTION [Link]	Jan 2017
SELF DRIVING CAB [Link]	Feb 2017
CREATING CUSTOMER SEGMENTS [Link]	Jan 2017
FINDING DONORS FOR CHARITY ML [Link]	Dec 2016
PREDICTING BOSTON HOUSE PRICES [Link]	Nov 2016

INDOOR AERIAL IMAGING USING MICRO-AERIAL-VEHICLE — Oct'14 – May'15

UNDERGRADUATE PROJECT	- *Robotics, Computer Vision, Python* Aerial imaging is mainly done with small planes from several kilometers of altitude which involves high cost and manual support. An unmanned micro aerial vehicle with a camera mounted on it is an alternative airborne platform. This type of system allows fast aerial imaging of small areas with a higher level of detail and lower cost. A typical MAV with a bottom and frontal camera which can be communicated with the computer over WIFI opens up an opportunity to sense the environment and take decisions with the help of computer vision algorithms. It can be used for updates of geographical maps after natural phenomena, e.g. update of routes in the areas affected by floods. The two cameras help to reconstruct an unknown 3D environment of which the drone navigates. In this project, we used AR drone as MAV and ROS as a platform to program it. We have developed a new package named 'rkv_ardrone' to traverse a specific area and capture images. The images are then stitched together to give a composite and high detailed view of the region.
PUBLICATION	Sandeep Konam, **Mansoor Basha Patan**, Renuka Lakshmi Dasari, "**Multi - Functional Real Time Path Programmable Robot**," in **IEEE** *International Conference on Vehicular Electronics and Safety* (ICVES 2014), December 16-18, 2014, Hyderabad, India. [link] - *Embedded Systems, Robotics*
PRESENTATION	**Patan Mansoor Basha**, "**Image processing through Hexacopter for Modern Agriculture**," presented at the *29th National Convention of Electronics and Telecommunication Engineers*, *Institution of Engineers* (India), October 29-30 2013. *-Image Processing, Robotics*
TRAINING	**EMBEDDED SYSTEMS AND ROBOTICS** May'13 – June'13 I3 Indya Technologies, Hyderabad
INTERNSHIPS	**Optical Switching Of A Channel Rhodopsin-2 Protein Integrated Neuron** July'14 - Aug'14 - *Neuro-electronics, Opto-genetics* Supervisor: Prof. Sukhdev Roy Dept. of Physics and Computer Science, Dayalbagh Educational Institute, Agra Program: Indian Academy of Sciences Summer Research Fellowship Program *Abstract :* Optogenetics is a newly emerging field where selective neurons of brain are genetically modified with light sensitive proteins like ChR-2. This genetically modified neuron can respond to the pulses of light. This opens up a new era where activities of brain can be controlled using pulses of light. During the research, a neuron modified with ChR-2 protein has been modeled as an electronic circuitry and simulated the optical response across various frequencies and pulse widths. **Finger Gesture Controlled LCD Display Using IR Sensors** May'14 - June'14 Electronics Corporation of India Limited, Computer Education Division, Hyderabad. *-Embedded Systems, HCI* Designed and developed a mobile phone prototype with a novel human computer interface using low cost IR sensors.
OTHER PROJECTS	**MULTI-FUNCTIONAL REAL TIME PATH PROGRAMMABLE ROBOT** *Robotics, Embedded Systems* Programmable Robots have immense potential in transforming the way we deal with daily routines. They affect the mode of interaction with devices, make our life simple and comfortable. In this paper, we present a dynamic way of programming a robot with path provided as input in the real time and a scaling mechanism that can easily map a large room to a small vicinity in the device through which the path is fed. The paper also presents an intuitive way of measuring the speed and position of the robot using simple IR sensors. Together put, it is a robot knowledgeable about its speed, position and is flexible to travel in any path specified by the user in the real time. Results of this methodology lay foundation for building a robot with abilities rather than tasks and has mettle to change the way robots are being made and utilized.

AUTO IRRIGATION UNIT USING EMBEDDED SYSTEMS

Embedded Systems, Agriculture Automation

Abstract:

Designed and developed an efficient way of automating water supply in the agricultural fields. A small embedded system which we call dummy root is placed along with the crop at specific places in the field. This dummy root has sensors which calculate the water level in the ground and controls the motor to supply the water accordingly.

SMART HOME DESIGN

Embedded Systems, Home Automation

Abstract:

Designed and developed an electronic circuitry using Atmega Microcontroller to control the Electrical appliances in home using a mobile phone.

TRAVELLED DISTANCE MEASURING ROBOT

Embedded Systems , Robotics

- Designed and developed a robot which calculates distance it travels using wheel encoding technique.

MAZE SOLVING ROBOT

Embedded systems, Robotics

- Developed a maze solving robot using IR sensors and exhibited it during Robotics Expo, March 16 -17, 2015, RGUKT, R.K. Valley,

ACADEMIC COURSES

ELECTRONICS AND COMMUNICATION ENGINEERING

Microcontrollers and Embedded Systems | Digital Image Processing | Digital Signal Processing
Information Theory and Coding | Analog, Digital, Mobile & Satellite Communications | VLSI
Analog & Digital Electronic Circuits | Electro Magnetic Theory | Semi-Conductor Devices
Network Theory | Signals and Systems | Control Systems

COMPUTER SCIENCE AND ENGINEERING

Artificial Intelligence | Computer Vision | Computer Organization and Architecture
Programming and Data Structures | Design of Algorithms | Internet Technology

MECHANICAL ENGINEERING

Engineering Drawing and Graphics | Manufacturing Practices | Engineering Mechanics

MATHEMATICS

Probability and Stochastic Process | Fourier Analysis | Discrete Structures
Integral and Differential Calculus | Vector Calculus

TECHNICAL SKILLS

Machine Learning	Tensorflow, Keras, CNN, RNN, LSTM, GAN
Systems Programming	C , Shell, Makefile
Object Oriented	C++ , Java, Python
Version Control	Git, Mercurial
Computer Vision	OpenCV, Matlab, Octave

	Robotics	ROS, AR Drone
	Microcontrollers	8051, Atmega 16
	Development boards	Aurdino, Rasberry PI
	Simulation tools	LabView, Multisim
	Web Languages	HTML, CSS, JavaScript [Basics]
	Automation	Pytest
	Unit Testing	Cmocka
	Operating Systems	Linux , Windows
	IDE's	Eclipse, Pycharm, Android Studio, Microsoft Visual Studio, Xilinx, AVR Studio

ACHIEVEMENTS

UG:

- Topper of the class in all semesters of Engineering
- Selected for Science Academies' Summer Research Fellowship Program 2015
- 1st prize in treasure hunt based on electronics clues on the occasion of E-Spark, National Level Fest 2013.

PUC:

- 1st prize for developing a mini search engine in python to find a word in a book during the inter class coding competitions in class XII, RGUKT, R.K. Valley.
- Topper of the class in all semesters of Pre-University Course (Class XII)

High School:

- 1st person from our town to get *state rank (9th)* in SSC (Class X) examinations.
- Received State Level *Merit Award* from Zakat Charitable Trust for the performance in SSC exams.
- Received *Prathiba Award* from AP State Government for the performance in SSC exams.
- 2nd prize in zonal level talent test conducted by SFI in class X.

OUTREACH AND SERVICE

CO-FOUNDER
Robotics Club, RGUKT, R.K. Valley

EVENT COORDINATOR
Robotics Expo, Abhiyanth - National Level College Fest, RGUKT, R.K. Valley

ORGANIZING MEMBER
E-Spark, Abhiyanth -National Level College Fest, RGUKT, R.K. Valley

SECRETARY
Technocrat wing, Electronic Society, RGUKT, R.K. Valley

TECHNICAL STUDENT WEB CASTING VOLUNTEER
Election Management, Nellore Town, A.P

ORGANIZING MEMBER
Helping Hands, RGUKT, R.K. Valley

DECLARATION I, hereby declare that the abovementioned particulars are true and correct to the best of my knowledge and belief.

PATAN MANSOOR BASHA