Pranay Mathur

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WORK EXPERIENCE

May 2019 - Jul 2019

Research Intern, **Council of Scientific & Industrial Research (CSIR)**
Central Electronics Engineering Research Institute, Pilani, India

Project Title:Autonomous Navigation of Drones using SLAM and Object Avoidance using a Depth Camera

Worked on embedded systems, Pixhawk and Arducopter flight controller,(Robot Operating System)ROS, Python,Intel Realsense D435i Depth Camera and algorithms for autonomous traversal and Simultaneous Localisation and Mapping in GPS denied environments

Worked under Dr.S.A Akbar,Chief Scientist CEERI Pilani, India

EDUCATION

B.E(Hons.), Electronics and Instrumentation, BITS Pilani, K.K Birla Goa Campus,India	**CGPA 8.55**	2017-Present
Class 12 Army Public School, New Delhi,India	**94.8%**	2016-2017
Class 10 Army Public School, New Delhi,India	**CGPA 10**	2014-2015

ADDITIONAL SKILLS

Computer Vision, Digital Image Processing, Microelectronic Circuits, Control Systems, Digital Design, Electronic Devices, Introduction to Computer Programming, Microprocessors and Interfacing, Digital Electronics, Automation, Embedded Systems

ROS(Robot Operating System), Verilog, Digital Design, Raspberry Pi, Linux, Cadence Virtuoso, Proteus, Arduino, C, Assembly Language, Python, Matlab

PROJECTS

Drone Delivery Using SLAM and Object Avoidance

Emedded Systems,Software Development,Aerial robotics **May 2019 - Present**

Project selected for funding by Electrical and Electronics Department, BITS Goa

Selected for funding by Sandbox Fabrication Laboratory, BITS Goa

Developing an algorithm for autonomous navigation of drones in GPS denied environments using Simultaneous Localization and Mapping and a depth sensing camera for object avoidance.

Development of custom computer vision algorithms for obstacle avoidance and recognition using Canny edge detection, and binarizing images.

Faculty Coordinator: Dr.Sarang C. Dhongdi, Assistant Professor, Dept. of EEE

Drone Control using Brain Wave Mapping **Dec 2018 - Present**

Cognition,Aerial Robotics,Electronics

The project was the recipient of the prestigious Prof. Suresh Ramaswamy Memorial Award

Project was selected for funding by Electrical and Electronics Department, BITS Goa

The project used brain wave mapping to ensure that the user could control a drone using just his thoughts.SVM was used for classification and neuro-vestibular feedback along with a Bayesian Filter was used to increase robustness of the prediction.

Worked with Processing3, Python, Emotiv, ROS, mavros and Dronekit

Faculty Coordinator: Dr Veeky Baths, Associate Professor, BITS Goa

Human Machine Teaming **Jun 2018 - Apr 2019**

Electronics,Aerial Robotics,Brain Computer Interface

Successfully contributed to a completed project allotted by Defence Research and Development Organization, India based on human machine teaming and swarm robotics.

Worked on ROS (Robot Operating System), Python, RotorS and Gazebo

Faculty Coordinator :Prof. Neena Goveas, Associate Dean, AUGSD,BITS Goa

Project Kratos **Dec 2017-Present**

Development of a mars rover as part of the University Rover Challenge (URC)

Project selected for funding by the Sandbox Fabrication Laboratory, BITS Goa

Worked on the Communication team using ROS for communicating data over Wifi

Worked on setting up Communication Networks using the Ubiquiti Networks Platform. Also worked on automation of processes using ROS and bash scripting in LINUX

IC Tester - Microprocessors and Interfacing **Jan 2019 - May 2019**

Project completed successfully as part of Microprocessors and Interfacing course

Used 8086 microprocessor to design an IC tester circuit that included simulation in proteus .

Faculty Coordinator : Dr.Anupama,Professor, EEE Dept.BITS Goa

Stabilisation of UAVs using Gyroscope and Accelerometer **Dec 2017-Jun 2018**

Project completed as part of the Aerodynamics Club, BITS Goa

Worked on Arduino Mega 2560 and MPU 6050 gyroscope and accelerometer. Used PID controller implementation to obtain optimized results.

POSITION OF RESPONSIBILTY

Teaching Assistantship-Microelectronic Circuits	Jan 2020-Present
Treasurer - Aerodynamics Club BITS Goa	Jul 2019 - Present
Inventory Head - Aerodynamics Club ,BITS Goa	Jun 2018 - Jun 2019
CTE Course Instructor- Introduction to Aerodynamics and Aviation Center for Technical Education, BITS Goa	Aug 2019–Dec,2019

CERTIFICATIONS

C programming	CTE,BITS GOA
Computer Vision	Coursera
Data Science	Coursera
Python for Data Science and AI	Coursera
Introduction to Robotics	CTE,BITS GOA
Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning	Coursera

SCHOLARSHIPS

ESSA Merit Scholarship	Army Welfare Education Society

AWARDS

Prof. Suresh Ramaswamy Memorial Award — BITSAA International

VOLUNTEERING EXPERIENCE

Registration Coordinator — Aug 2018-Present
Academic Undergraduate Studies Division
BITS Pilani,Goa

RESEARCH INTERESTS

Aerial Robotics, Automation, Computer Vision, Digital Image Processing, Path Planning, Brain Computer Interface, Embedded Systems