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 , linux based flight controllers,(Robot Operating Systems)ROS,python,Intel Realsense Cameras and algorithms for autonomous traversal and Simultaneous Localisation and Mapping using feature extraction 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

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

PROJECTS

Drone Delivery Using SLAM and Object Avoidance

Emedded Systems,Software Development,Aerial Robotics May 2019 - Present

Project selected for funding by EEE 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 a custom flight controller and custom computer vision algorithms using Canny edge detection, Pointclouds and Octomap based visual localisation on an Nvidia Jetson TX2

Faculty Coordinator: Dr Sarang C. Dhongdi

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 EEE 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 was used to increase robustness.

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

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

Human Machine Teaming, DRDO Jun 2018 - Apr 2019

Electronics,Aerial Robotics,Brain Computer Interface

Successfully contributed to a completed project allotted by DRDO, 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 .

Worked under 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

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

Robotics, Automation Algorithms, Aerial Robotics ,Digital and Analog Electronics, Path Planning
Brain Computer Interface, Embedded Systems

Github: https://github.com/Matnay

LinkedIn: https://www.linkedin.com/in/pranay-mathur-902391191/