

WILLIAM R. EBENEZARAJ

Aspiring Controls and Embedded Systems Researcher

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West Bengal, INDIA

"Working hard in small steps to advance mankind in giant leaps!"

SKILLS

C++ python ROS2 Bash MATLAB
STM32 AVR Solidworks Ansys
git LaTeX gnuplot Tensorflow
Leadership Communication Initiative
Adaptability Documentation

EDUCATION

B. Tech. in Aerospace Engineering

IIT Kharagpur

July 2019 – Ongoing

Minor in Mechanical Engineering
Specializing in Embedded Software and Controls

Involved in two research groups, NSS (volunteering in rural areas), and Evangelical Union.

CGPA: 8.89 ACGPA: 8.5

High School

Kendriya Vidyalaya IIT Kharagpur

Aug 2010 – March 2019

AISSEE 2019

Physics, Chemistry, Math, English
Student Council, Readers' Club, School Band

REFEREES

Prof. Manoranjan Sinha

@ IIT Kharagpur

maasinha@aero.iitkgp.ac.in

Professor Sinha is the Head of the Department of Aerospace Engineering at IIT Kharagpur. Areas: Control Systems, AI, Flight mechanics

Prof. Anup Ghosh

@ IIT Kharagpur

anup@aero.iitkgp.ac.in

Aerospace undergraduate focused on flight mechanics and control theory. Devised a sliding mode controller and knowledgeable in classic and intelligent sensor fusion. Experienced in AVR and ARM-based embedded systems and deep learning with 7+ major projects completed. Fluent in python and C++ for object-oriented programming. Developed a ROS bridge for a popular spaceflight simulator. Also a pianist, sci-fi writer, and robotics mentor.

EXPERIENCE

Summer Intern

IIT Bombay

May 2021 – Ongoing

- Created lecture notes in LaTeX.
- Verifying course content on flight mechanics.
- Matlab simulations done for performance study.
- Created animations using gnuplot and python. [see [here](#)]

Head and Active Member

Advanced Drones Research Group

Dec 2020 – Ongoing

IIT Kharagpur

- Multidisciplinary group of undergraduate students
- Under Prof. Aditya Bandopadhyay, IIT Kharagpur
- Involved in Flight Mechanics, Controls, and Avionics

Controls and Embedded Team Member

Autonomous Ground Vehicle

Feb 2020 – Ongoing

IIT Kharagpur

- Involved in [Indy Autonomous Challenge](#) (Base Software Team)
- Working on the controls team of Mahindra E2O [see [here](#)]
- Worked on mechatronics on upcoming URC Rover [see [here](#)]

PROJECTS

High-resolution Megasample-Speed Data Acquisition System

IIT Kharagpur

Summer '20

- Built an STM32H7-based 24-bit high-speed DAQ system. [see [here](#)]
- Designed PCB to make a compact solution

Ardupilot-based Flying Wing UAV

IIT Kharagpur

Winter '20

- Tasked with learning about flying wings and worked on one.

Professor Ghosh is an assistant professor at the Department of Aerospace Engineering at IIT Kharagpur.

Prof. Aditya Bandopadhyay

@ IIT Kharagpur

✉ aditya@mech.iitkgp.ac.in

Professor Bandopadhyay is an assistant professor at the Department of Mechanical Engineering at IIT Kharagpur. Areas: Microfluidics, Fluid Mechanics

- Designed a Prandtl-D based flying wing on Solidworks.
 - Gained hands-on experience with operating Ardupilot firmware and Pixhawk boards.
 - Corrected CG issues and obtained $\approx 20\%$ static margin.
 - Supervisor: Prof. Aditya Bandopadhyay
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ATMEGA32 based Hot Wire Anemometer

IIT Kharagpur

📅 Autumn '20

- Designed and Built a Constant Current HWA. [see [here](#)]
 - Simulated prior to hardware testing on Simulink.
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Six-Wheeled Mars Rover for Astronaut Assistance

AGV

📅 Summer '20

- Designed the Wheels and Chassis for our URC rover. Analysis was done on Ansys Static Structural. [see [here](#)]