



Donipolo Ghimire

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Skills

- Python, C++
- Node JS, Express
- ROS
- MATLAB
- CAD (NX)
- ANSYS
- Stage, Gazebo

Coursework

Mechanical Design I& II
Heat Transfer
System Dynamics
Fluid Mechanics I & II
Material Science
Computer Science I
Manufacturing

Activities

American Society of Mechanical Engineers, Howard University
Program Chair
2017 - Present

- Organized technical development and Networking workshops for students of the Engineering Department, and motivate the rise of African Americans in the tech industry

Engineers Without Borders

Society of Automotive Engineers

Math Club, Howard University

Education

Howard University | Graduating May 2019 | Mechanical Engineering

GPA- 3.70

Professional Experience

NASA / HOWARD UNIVERSITY

Undergraduate Researcher | Washington, DC

August 2018 - Present

- Designed, and developed a web server using Node JS and Express, as the web application framework, that is implemented in the Disruption Tolerant Networking (DTN) architecture
- Worked with a team to develop a networking model and a system for transmitting information in environments with frequent disruptions, example: outer space

UNIVERSITY OF CALIFORNIA IN SAN DIEGO

Undergraduate Researcher | STARS RECIPIENT | San Diego, California

June 2018 - August 2018

- Designed, analyzed and developed motion planning strategies for Unmanned Aerial Vehicles(UAVs) and Unmanned Ground Vehicles(UGVs)
- Used ROS(Robot Operating System) as the underlying software component which was run in a single board computer, integrated into small omnidirectional robots
- Achieved cooperative behavior among robots, and created algorithms and estimated position using Kalman filter
- Planned to perform heterogeneous form of interaction, where the human agent, UAVs and UGVs interact

HOWARD UNIVERSITY

Undergraduate Researcher | Washington, DC

August 2017- May 2018

- Tested the properties of nanofluids and manufacture nanofluids for high speed drilling, orbital drilling and sheet metal forming
- Used Nanofluids for testing energy efficiency in engines and transmissions, vehicle tribology etc. Using the data, performed data analysis in MATLAB

DEPARTMENT OF MATHEMATICS, HOWARD UNIVERSITY

Math Tutor | Washington, DC

August 2017 – May 2018

- Assisted about five students, in a daily basis, of Howard University individually or in small groups and help them improve their math skills
- Helped students identify areas which required improvement and provided feedback

Projects

SENIOR CAPSTONE PROJECT DELIVEROID, Howard University

August 2018- Present

- Designed a working prototype of an Unmanned Ground Vehicle that delivers papers and packages in the offices of same floor or multiple floors
- Developed localization, control algorithms and Memory Map, RFID tags helped Unmanned Ground Vehicle find its way to the requester

PID CONTROLLER FOR GROUND ROBOT, UC in San Diego

June 2018 - July 2018

- Integrated a Proportional-Integral-Derivative(PID) Controller for Ground Robot that accepts local points in space as its input and gives desired output of velocity in x and y direction for the robot
- Tested the Proportional-Integral Derivative in a turtlesim (a simple tool for teaching Robot Operating System packages) which provides a simulator

SANDIA NATIONAL LABORATORY, Howard University

March 2016 - May 2016

- Lead a team to examine variability material failure of a very common aluminum alloy
- Tested different materials and assembled the testing machine, and gained hands on experience on propellers used in turbines of aero-structure
- Designed CAD module of the tensile testing machine for a user manual and 3D printed samples to position dog bone shaped aluminum samples

Achievements

- Awarded Capstone scholarship of more than \$100,000 for excellent performance in high school and SAT scores
- Awarded excellence certificates by the Office of Residence Life for great academics