MUKESH GHIMIRE

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SUMMARY

I am a prospective graduate student applying for the PhD program. My undergraduate thesis is on Application of Deep Reinforcement Learning on Amazon's Deepracer. My interests lie in robotics and controls.

EDUCATION

Bachelor of Science in Mechanical Engineering Aug 2016 - May 2021
Minors: Computer Science and Mathematics
University of Mississippi
GPA: 3.98

INTERESTS & SKILLS

Interests Robotics and Controls, Mechatronics, Machine Learning, Artificial Intelligence
Skills Python, Java, C, MATLAB, Tensorflow, Solidworks, Arduino

EXPERIENCE

Lab Teaching Assistant (ENGR 314) Aug 2020 - Present
Material Science Laboratory - Department of Mechanical Engineering, Olemiss

- Helped to transition to online learning by performing demonstrations of various experiments for the lab course
- Graded lab reports of 72 students in the class.

Engineering Co-op Aug 2019 - Aug 2020
Thyssenkrupp Elevator, Middleton, TN

- Assisted in 'C2D' project with the goal of standardizing elevator production.
- Developed Standard Operation Procedures (SOPs) for production processes in Traction Control, Cabs, and Signals Assembly for Hydraulic and Traction Elevators.
- Developed manufacturing prints for Configure-To-Order (CTO) offerings.
- Used data analysis techniques to reduce the data processing time by more than 50%.

RESEARCH & PROJECTS

DeepRacer Sep 2020 - Present
Honors Thesis

- Trained Deep Reinforcement Learning (DRL) model to run the Amazon's DeepRacer car autonomously
- Wrote reward functions for different track settings and race settings to get effective result for different types of races
- Deployed the model in the 1/18 scale model of the DeepRacer car to test in real-life scenario.

Advisor: Dr. Yixin Chen

Summer Research Student May 2019 - Aug 2019
Department of Mechanical Engineering, Olemiss

- Reviewed journal articles on Vortex Tube, a device that takes compressed gases and separates into hot and cold streams known as Ranque-Hilsch Effect
- Attempted to understand the plausible reasons behind the temperature separation effect
- Established a ground-work for further research in the Department of Mechanical Engineering.

Advisors: Dr. Mike Nash, Dr. Taiho Yeom

Undergraduate Lab Assistant May 2019 - June 2019
Composite Materials Research Lab, Olemiss

- Studied the process of pultrusion in detail
- Manufactured carbon-fiber composites using several combinations of resins and epoxies provided by two renowned chemical companies.

Advisor: Dr. Ellen Lacky

ASME SDC: The Pick-and-Place Race Jan 2019 - May 2019

- Led a team of four to design and develop a remote controlled robot for the ASME Student Design Competition in 2019.
- Won the qualifying competition within the school to further participate in the competition.

LEADERSHIP AND SERVICE

STEM Camp Counselor May 2018 - July 2018
Office of the Pre-College Programs - Olemiss

- Mentored students from middle school to high school on their week-long STEM camps
- Organized camps with wide range of themes: programming, biology, game development, etc
- Performed scientific demonstrations such as: projectile motion, heat transfer, 3-D printing, concrete manufacturing and testing, etc
- Discussed a day-in-life of a STEM student so as to encourage students to purse higher education in STEM.

Supervisor: Tiffany Gray

Community Assistant Aug 2017 - May 2019
Department of Student Housing - Olemiss

- Maintained a positive living atmosphere for 50+ residents, resolving conflicts whenever necessary
- Planned and organized events promoting mental, physical, and sexual health along with stress-relieving events during finals week
- Assisted in selection and evaluation of incoming CAs.

Supervisors: Erin Parker, Anthony Calcagno

HONORS & AWARDS

Academic Excellence Award, SMBHC Research Fund Award, Phi Kappa Phi, Tau Beta Pi