

MUKESH GHIMIRE

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SUMMARY

PhD Student at Arizona State University working in the field of game theory, reinforcement learning and optimization.

EDUCATION

PhD in Mechanical Engineering
Arizona State University, Tempe, AZ

Expected Graduation: May 2025

Bachelor of Science in Mechanical Engineering
Minors: Computer Science and Mathematics
University of Mississippi, University, MS
GPA: 3.98/4.0

May 2021

PUBLICATIONS

Sunny Amatya, **Mukesh Ghimire**, Yi Ren, Zhe Xu, and Wenong Zhang “*When Shall I Estimate Your Intent? Costs and Benefits of Intent Inference in Multi-Agent Interactions*” in American Control Conference (ACC), 2022 (Accepted)

HONORS & AWARDS

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

SKILLS

Python, Java, MATLAB, Tensorflow, Pytorch, OpenAI gym, Arduino, Gazebo, Git, L^AT_EX

RESEARCH & PROJECTS

Reinforcement Learning in Autonomous Racing
Honors Thesis

Sep 2020 - April 2021

- Trained Deep Reinforcement Learning (DRL) models 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 models in the 1/18 scale model of the DeepRacer car to test in real-life scenario.

Summer Research Student
Department of Mechanical Engineering, University of MS

May 2019 - Aug 2019

- 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.

Undergraduate Research Assistant
Composite Materials Research Lab, University of MS

May 2019 - June 2019

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

EXPERIENCE

Lab Teaching Assistant (ENGR 314)

Aug 2020 - April 2021

Material Science Lab - Department of Mechanical Engineering, University of MS

- 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.
- Assisted students in writing technical reports.

Engineering Co-op

Aug 2019 - Aug 2020

Thyssenkrupp Elevator (now TKE), Middleton, TN

- Assisted in 'C2D' (Configure-To-Deliver) project with the goal of standardizing elevator production
- Developed Standard Operating 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%.

LEADERSHIP & SERVICE

Community Assistant

Aug 2017 - May 2019

Department of Student Housing - University of MS

- 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 Community Assistants.

STEM Camp Counselor

May 2018 - July 2018

Office of the Pre-College Programs - University of MS

- Mentored students from middle school and high school on their week-long STEM camps
- Organized camps with wide range of themes: programming, biology and game development
- Performed scientific demonstrations such as: projectile motion, heat transfer, 3-D printing, concrete manufacturing and testing.

VOLUNTEER & COMMUNITY INVOLVEMENT

Poverty Simulation

April 2019

University of MS

- Organized Poverty Simulation to raise awareness about poverty in the state of Mississippi
- Helped participants sensitize to the realities of poverty
- Brainstormed the misconceptions that the simulation helped to overcome regarding life in poverty.

Alternative Break

March 2017

Organized by the Department of Student Housing, University of MS

- Helped pack over 1000 meals for children in the Las Vegas area (collaborated with Three Square Food Bank)
- Recycled soaps and other sanitary products discarded from lodging facilities in the Las Vegas area (collaborated with Clean the World)
- Helped clean the Grand Canyon National Park.