

RUPAK RAUT

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EDUCATION

The University of Southern Mississippi

Major: *Computer Science*

Minor: *Mathematics and Economics Data Analytics*

Hattiesburg, MS

Expected Graduation: Dec 2025

GPA: 4.0

WORK EXPERIENCE

University of Southern Mississippi

Mathematics Learning Assistant

Hattiesburg, MS

August 2023- Present

- Assist students in learning the concepts of their respective mathematics course.
- Assist professors in grading student's assignments.
- Maintain an interactive class environment among 150 students.

University of Southern Mississippi

Mathematics Tutor

Hattiesburg, MS

September 2023- Present

- Assist students in resolving their confusions outside of the class.

Research Experience

University of Southern Mississippi

Research Assistant

Hattiesburg, MS

Project: Guarding the IoD: Strategies for Secure and Private Drone Networks

September 2023 – Present

- Utilized machine learning techniques to develop predictive algorithms that proactively identify and respond to potential security breaches in real-time, bolstering the IoD network's resilience.
- Employed state-of-the-art cryptographic protocols to safeguard data transmission and storage within drone networks, ensuring confidentiality and integrity.

PROJECTS

Real Time Object Detection

January 2023 – March 2023

- Created a real time object detection machine learning model using OpenCV, Ultralytics YOLOv8 model and NumPy.
- Utilized 'yolovm8.pt' deep learning techniques to divide an image into grids and predict the bounding boxes and class probabilities of objects.
- Employed OpenCV in rendering bounding boxes and labels real time and NumPy handled the extracted data.

Newspaper App

August 2022 – November 2022

- Used Django, Bootstrap, and jQuery to model a newspaper website.
- Features involve creating, editing, and deleting a number of users and articles.

Tic Tac Toe GUI

June 2022 - July 2022

- Built a tic tac toe game featuring a GUI using python's tkinter library.
- Inherited foreign 'tk.Tk' class into program class to model the GUI.

Honors & Awards

- Academic Excellence Scholarship – Merit based scholarship that covers full-tuition.

Skills & Interest

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|--------------|-----------|-------------|
| • Python | • PyMongo | • openCV |
| • C++ | • MongoDB | • mySQL |
| • JavaScript | • NumPy | • Bootstrap |
| • Scrapy | • React | • jQuery |