

Research Objective

I am interested in exploring the frontiers of interdisciplinary and pure AI research.

Experience

- March 2025 – **Research Intern**, *Norwegian University of Science and Technology*, Trondheim, Norway
 Present *Advisors: Prof. James D.M. Speed, Dr. David R. Williamson*
Research Areas: Machine Learning, Computer Vision, Generative AI, Ecology
- Developing a model to analyze historical herbivory patterns using computer vision and machine learning on herbarium sheets with aim to provide valuable insights into historical insect populations and ecological research.
- November 2024 – **Undergraduate Researcher**, *APP Center for AI Research (APPCAIR)*, Goa, India
 Present *Advisors: Prof. Snehanshu Saha (Head: APPCAIR), Prof. Santonu Sarkar (HOD: CSIS)*
Research Areas: Machine Learning, Deep Learning, Generative AI, Computer Vision
- Working on a novel driver behavior modeling problem to quantify behavioral realism in traffic scenarios, with plans to adapt the model for complex traffic conditions in countries like India.
- May 2024 – **Software Development Intern**, *Indian Red Cross Society West Bengal*, Kolkata, India
 July 2024 *XCode, Android Studio, Flutter, Firebase*
- Developed a Blood Bank application from scratch for the NGO to facilitate the process of blood donation and acceptance.

Research / Projects

- August 2024 - **Design Project**, *Extended from CHEM F266*,
 November 2024 *Decision Trees, Optimization, Linear Algebra*
- Predicted viscosities of different binary liquid mixtures using multiple predictive and corelative models.
 - Developed a Machine Learning Model using Decision Trees and SVMs(w/ better regularization) to predict viscosity values with more accuracy than the co-relative models.
- Jan 2024 – **CHEM F266**, *Study Project associated with Birla Institute of Technology and Science Pilani, Goa, [Git](#)*
 May 2024 *Advisor: Prof. Ranjan Dey(Fellow Royal Society of Chemistry, U.K.)*
- Predicted ultrasonic velocities of different binary liquid mixtures using multiple predictive models.
 - Compared values from different predictive models to verify and predict which fits the best and to what conditions.

Education

- 2022–Present **Dual Major in B.E. Mechanical Engineering and M.Sc. Chemistry**, *Birla Institute of Technology and Science Pilani, Goa.*

Relevant Coursework

- Mathematics Probability and Statistics(MATH F111), Linear Algebra(MATH F112)
- Computer Science DeepMind x UCL — Deep Learning Lectures(YouTube)*, CS229 Stanford's Machine Learning(YouTube), CS50's Introduction to Artificial Intelligence with Python(edx), CS50's Introduction to Programming with Python(edx)
- Chemistry Thermodynamics(CHEM F211), Quantum Chemistry(CHEM F213), Computational Chemistry(CHEM F244), Bio and Chemical Sensors(CHEM F414)

* Ongoing Course(s)

Technical Proficiency

- Languages Python, Java, C, C++, Dart, YAML
- Software/Tools TensorFlow, Keras, Anaconda, GitHub, Numpy, PyTorch