

PROJECTS AND INTERNSHIPS

- **Master's Thesis : Model Misspecification using Machine Learning - IIT Delhi** On-site
Instructor: Dr Rajdip Nayek May 15th 2024 - Ongoing
Working on model misspecification, where a partial model of a system is known (an ODE or PDE) and we need to find complete / correct model using real world data.
Using: Time Series data · Stochastic Differential Equations · Neural Operators · Neural Networks · Neural ODE's · Kalman Filters · Gaussian Processes (GP) · Finite Element Method (FEM)
Languages Used : Python · MATLAB
- **Simulation Based Calibration - TU Dortmund** Remote
Instructor: Dr Paul-Christian Bürkner May 15th 2024 - Ongoing
Working on understanding and improving Simulation Based Calibration (SBC) which is used to check if the posterior model (in Bayesian Frameworks) is correctly implemented.
Languages used: R language · Stan
- **NLP Project: Tweets Analysis - Sabudh** Hybrid
Instructors: Dr Sarabjot Singh Anand, Anchit Srivastava May 3rd - July 25th 2023
Worked on an Natural Language Processing project with a client at **Tatras and Sabudh**.
Analysed of tweets posted by different Indian political leaders using Python.
Tweets and news scrapping · Pre-processing tasks (cleaning, tokenizing, vectorizing) · Sentiment analysis · LDA · Guided LDA
Packages used: Selenium · spaCy · PyMuPDF
- **Bayesian Optimization - Chennai Mathematical Institute** On-site
Instructors: Dr Sourish Das June 1st - July 22nd 2023
Internship at Chennai Mathematical Institute. Implemented Bayesian Optimization from scratch in Julia.
Bayesian Inference · MCMC · Metropolis Hastings · Gibbs Sampling · Bayesian Optimization
[Code provided here](#) (GitHub link)
- **Kaggle Speech Recognition Project** Coursework , On-site
Instructors: Dr Sarabjot Singh Anand Semester of 2022-2023
Using training data for phonemes made models in TensorFlow Keras, to get highest prediction scores in the class of around 100 people. This competition was conducted on Kaggle.
EDA · RNN · LSTMs · Bi-LSTMS · Batching · Dropout
- **Universities Research Areas Summarization Project** Coursework , On-site
Instructors: Dr Vishal Bhardwaj Semester of 2023-2024
Scraping institute website's faculty pages and generating table of important information and department wise statistics. Also implemented a free LLM to take scrapped information and give summaries and requested data.
Using : Web scrapers · Pre-processing (cleaning tokenizing, vectorizing) · LLMs (Zypher LLM)
Packages Used: Scrapers · BeautifulSoup · spaCy · Zypher LLM
[Code provided here](#) (GitHub link)

RELEVANT COURSES

Algorithmic Game Theory (Ongoing) · Distributed Optimization and Machine Learning (Ongoing) · Machine Learning · Data Science (Python) · Probability · Predictive Analysis · Measure Theory · Linear Algebra · Group Theory

SKILLS

- **Analytics:** Regression, Machine Learning, Bayesian Data Analysis
- **Languages:** Python, R, Julia, MATLAB
- **Libraries:** NumPy, Pandas, Matplotlib, Keras, MongoDB
- **Tools:** Git, MS Powerpoint, MS Excel, Vim/Neovim
- **Platforms:** Linux, Windows

EDUCATION

- **Indian Institute of Science Education and Research- Mohali** Mohali
BS-MS 2020-Present
Current CPI: 8.2
- **Amity International School Sector-46** Gurgaon, India
Class 12th 2020
Courses: PCM, Informatics Practices
Grade: 94.6 Percent

EXTRACURRICULAR

- **Placement Coordinator IISER Mohali:** Coordinating placements for outgoing batch of IISER Mohali (Feb'24 - August'24)
- **Gold Medal in IISM 2024 (Volleyball):** Inter IISER Sports Meet (IISM) is an annual sports competition attended by IISc, all IISER's, NISER and CEBS
- **Silver Medal in IISM 2023 (Volleyball):** Inter IISER Sports Meet (IISM) is an annual sports competition attended by IISc, all IISER's, NISER and CEBS
- **Co-convener of Adventure and Sports Club:** Involves organizing events in sports and adventure trips like trekking (Nov '21 to Nov '22)
- **Hobbies:** Football, Volleyball, Reading