National Institute of Technology Rourkela

Departmental Seminar

| | |
|---|---|
| Seminar Title | : Regional data-driven weather forecasting over India with Pangu-weather architecture and IMDAA reanalysis dataset |
| Speaker | : Animesh Choudhury (Roll No: 521er6015) |
| Supervisor | : 8125817908 |
| Venue | : ER 303 CLASS ROOM |
| Date and Time | : 13 Aug 2025 (04:15 PM) |
| Abstract | : Numerical weather prediction (NWP) has evolved over the years and is currently the best possible solution for forecasting the weather, yet it faces many challenges, such as accuracy, computational cost, scalability, etc. The data-driven approach has emerged as a potential way to overcome some of the shortcomings of NWP. In the recent past, several global data-driven weather forecasting systems have developed, and some of them even performed better than the operational NWP-based forecasting systems. Pangu-Weather (PW) is the first data-driven architecture that has outperformed the ECMWF's Integrated Forecasting System (IFS). In this study, a regional data-driven weather forecasting system is built over India using PW as a base and trained on the Indian Monsoon Data Assimilation and Analysis (IMDAA) reanalysis dataset. The performance of the model is evaluated with Root Mean Square Error (RMSE), Anomaly Correlation Coefficient (ACC), Mean Absolute Percentage Error (MAPE), and Fractional Skill Score (FSS) and found to be encouraging. It also shows excellent efficiency in predicting the cyclone tracks when compared with the reanalysis and observational observation. |