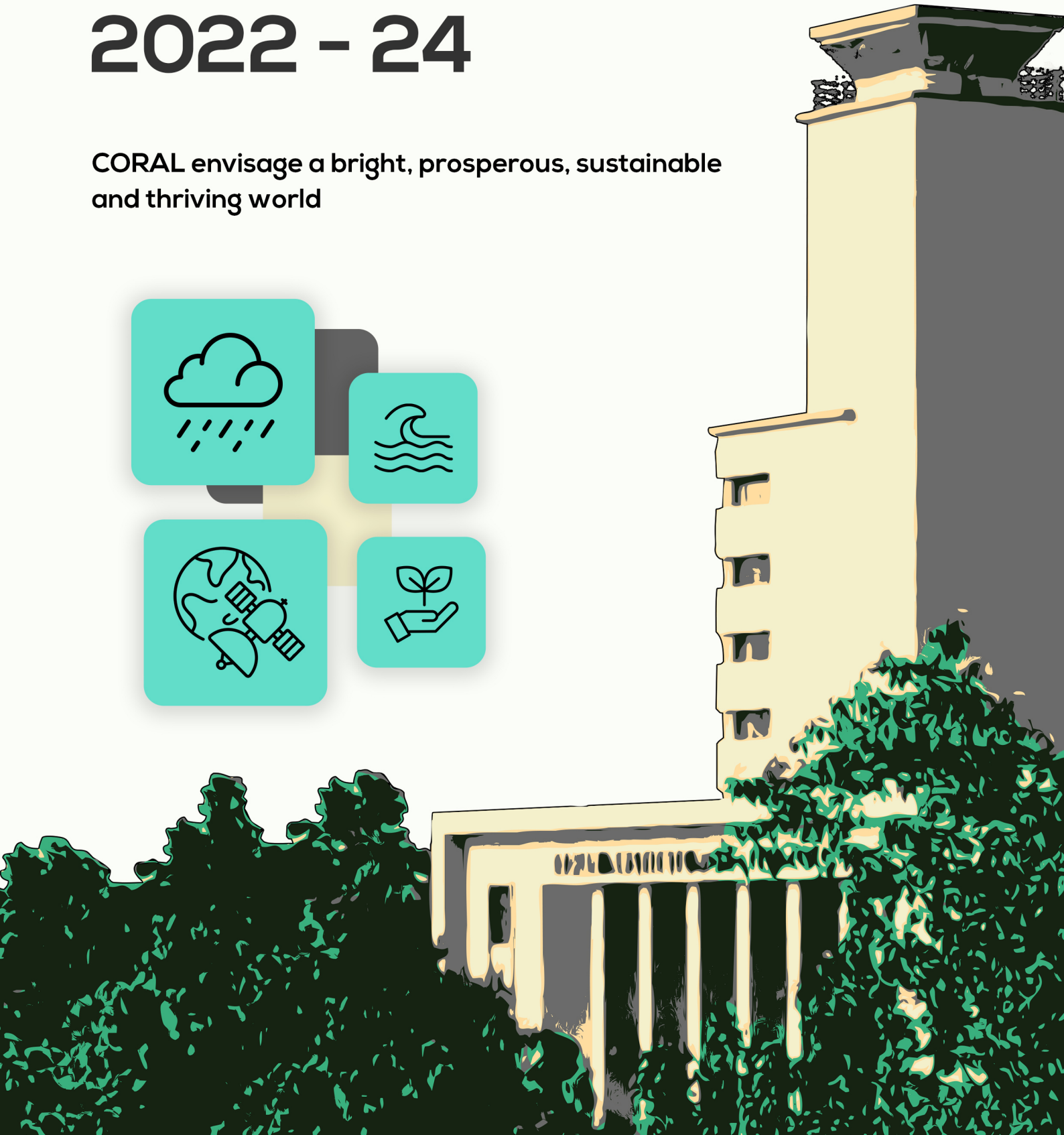
Centre for Ocean, River, Atmosphere and Land Sciences
भारतीय प्रौद्योगिकी संस्थान खड़गपुर
Indian Institute of Technology Kharagpur

M.Tech Brochure 2022 - 24

CORAL envisage a bright, prosperous, sustainable and thriving world



INTRODUCTION

The Centre for Ocean, River, Atmosphere and Land Sciences (CORAL) at Indian Institute of Technology Kharagpur was established in March 2005 for imparting quality teaching and advanced research in the area of Atmospheric and Oceanic Sciences.

The vision of the Centre is to become a world class educational and research hub for the development of high-quality trained manpower in research on problems related to Oceanography, River, Atmosphere, Land and Climate for societal applications.

Graduates from our interdisciplinary center showcase exceptional proficiency across diverse domains, spanning research, data analytics, software engineering, consulting, academia, and more. The centre has Computing Laboratory, beside the use of HPC facility of the Institute, for integration of numerical models, visualization of model results and analyses. The centre is actively involved in various sponsored research programmes with funding from ISRO, INCOIS, MoES, IFS, UKRI, National Geographic etc.

COLLABORATORS

Centre for Ocean, River,
Atmosphere and Land Sciences

COURSES OFFERED

DATA SCIENCE

- Simulation Lab for Atmosphere and Ocean Dynamics
- Groundwater Modelling & Simulation

REMOTE SENSING & GIS

- Remote Sensing and Terrestrial Climate Variables
- Satellite Remote Sensing Exploration of the Ocean and Climate
- Satellite Oceanography

MACHINE LEARNING

- Computational Methods for Earth System Science
- Weather Prediction and Global Climate Change
- Design Lab
- Machine Learning in Earth System Science
- Weather Analysis & Prediction

MODELLING

- Modelling of Extreme Events
- Climate Modelling
- Modelling of Air Sea Interactions
- An Introduction to Global Spectral Modelling
- Atmospheric and Hydrological Modelling Lab
- Ocean and Storm Surge Modelling

DATA ANALYTICS

- Data Analytics in Earth System Science
- Atmospheric Observations
- Data Analysis and GIS Application Lab

MANAGEMENT

- Climate Risk Adaptation, Mitigation and Sustainable Development
- Environmental Hazard Management

INTERNSHIPS

Data Analytics

- Satellite and model oceanic current data validation with in-situ drifter data
- High resolution model evaluation of Arabian Sea
- Trend analysis in significant wave height of satellite altimeter data
- Quantification of rainfall trends to find multivariant ENSO index and it's effect on India.

Machine Learning & Deep Learning

- Assessment of Ocean Acidification using ML
- ML based estimation of nutrient concentration
- Application building using Generative AI and LLMs
- Building a dry gas seal model for anomaly and leakage detection using ML algorithm

Product Management

- Intersection removal for piping system
- Annotation layout in 3D space
- Design, develop, deploy a web application for the client.

Environmental Monitoring

- Performance of the GFS model in capturing the monsoon depression over the Bay of Bengal
- Carbon cycle and Ocean modelling

Geospatial Ecosystems

- Collecting, combining and visualizing various types of geospatial data
- Spatiotemporal Characteristics and IVT/IWV Analysis in Southern and Northeast India using ERA5 Data
- Image classification
- Land use land cover mapping to identify forest land cover change

STUDENTS' PORTFOLIO

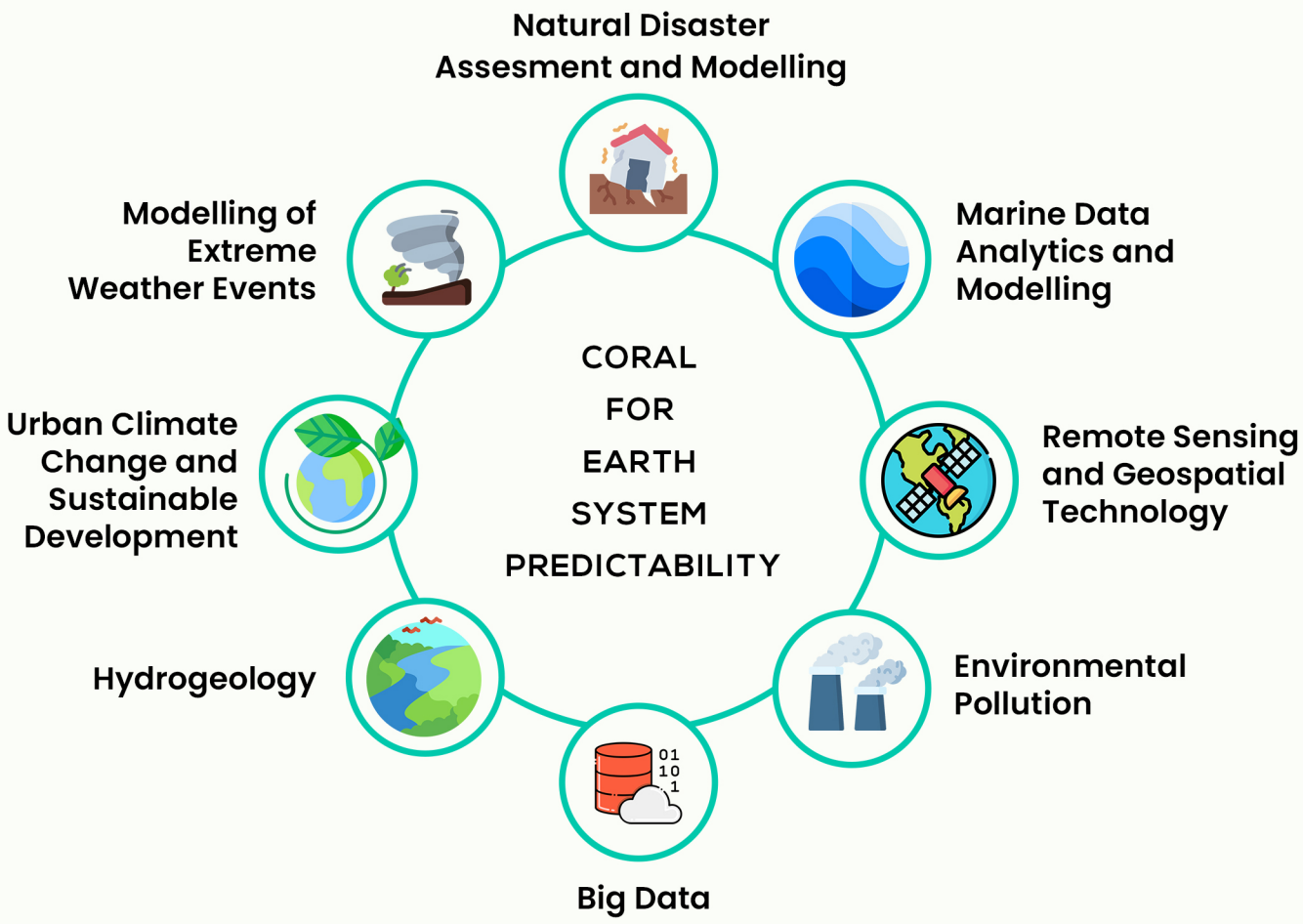
Explore the diverse talents shaping our academic community through students' portfolios and their ongoing projects at

coraliitkgp.github.io/students

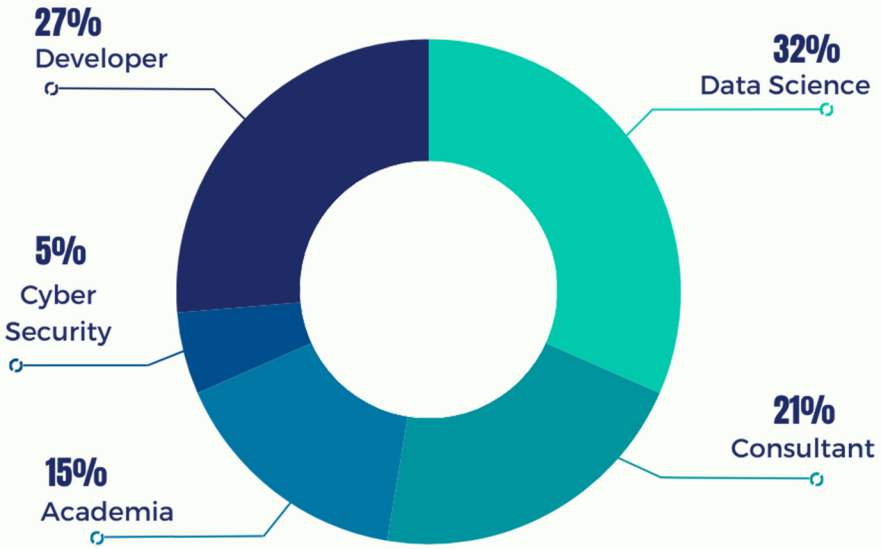
STUDENTS ACHIEVEMENTS

- The International Astronomical Union (IAU) named Asteroid 28964 (2001 FG122) after our distinguished alumnus, Ashok Kumar Verma.
- Our alumini is contributing to global initiatives as an Expert Group Member in the UN Ocean Decades Vision 2030.
- Our esteemed alumni hold key positions across prominent tech industry leaders such as Capgemini, GE Healthcare, Ernst & Young, Merilytics, IBM, and more.
- Two M.Tech. scholars from our department have been awarded the esteemed DAAD Scholarship.
- Recognition at the National Conference of the Ocean Society of India with Best Paper and Best Paper Awards, achieved by our dedicated students.

ACADEMIC LANDSCAPES



PLACEMENT STATISTICS (2020-23)



MAXIMUM CTC
22 LPA

AVERAGE CTC
12.75 LPA

MINIMUM CTC
8.5 LPA

SOME OF THE MAJOR RECRUITERS

wipro, AADHAAR, HSBC, IBM, TIGER ANALYTICS, General Mills, 北方工业 NORINCO, ICICI Bank, AON, CAIRN, pwc, Capgemini, AXTRIA INGENIOUS INSIGHTS, RMS

CONTACT

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