# Amity Centre for "COGNITIVE COMPUTING and BRAIN INFORMATICS" (ACCBI)

## Mission

Does reverse engineering the brain have a direct, immediate impact on our society? Stephen Hawking has said, 21st Century is the century of complexity science. Largest funding in the history of mankind is made in the reverse engineering of brain research, since the objective is not to make a human brain but generate technologies changing every single aspect of a human life. Brain is the ultimate complexity machine for any research field, energy and environment, computing or materials science, thus reverse engineering of the brain would bring about technologies that would trigger another industrial revolution.

Amity University Rajasthan has established a Research Centre **ACCBI** to carry out research in Experimental, theoretical, and applied aspects of computational,cognitive engineering and Innovations in Healthcare, Biomedical, Artificial Intelligence and Electronics. Computational and cognitive engineering investigate diseases and behavioral disorders with computer and mathematical approaches that are widespread in science, engineering, technology, and industry. Electronics and Healthcare informatics have emerged in the health domain providing an extremely wide variety of solutions using computational techniques. Healthcare informatics is a spectrum of diverse fields that includes a study of the design, development, and applications of computational techniques to improve health care. The goal of the centre is to bring together researchers, educators, and business experts from allied research and development disciplines.

**The key areas of research of ACCBI**

- Healthcare Informatics
- Cognitive Science and Computational Biology
- Signal Processing, Computer Vision & Rhythm Engineering
- Network and Security
- Artificial Intelligence and soft Computing
- IoT and Data Analytics with high power computing(HPC)
- Antenna Theory and Techniques for Healthcare

**Opportunities at/for Amity University Rajasthan**

It is evident from the recent developments that cognitive science and health informatic research are becoming very important and this changing priorities have opened new prospects for Amity University Rajasthan to become one of the national leaders in the field and make an imprint at International level. Moreover, this is the area for future technologies with ample opportunities towards invention, intellectual property rights, research publications, trained professionals and government/private funding. Inception of ACCBI will soon become a pillar of Amity University Rajasthan in collaboration with premier institutes from India and abroad.

**Activities under the centre**

The centre was established on 26$^{th}$ April,2024. During the official inauguration Amity University Rajasthan hosted a Co-Design Workshop on 'Designing and Developing Explainable Artificial Intelligence-Powered Tools for Early Detection and Management of Dementia', funded by Nottingham Trent University (UK) and supported by DST PURSE. A key highlight during the ceremony was the signing of a Memorandum of Understanding (MoU) between the Cognitive Computing and Brain Informatics (CCBI) research group of Nottingham Trent University (UK) and the newly established Amity Cognitive Computing and Brain Informatics Centre (ACCBI). Dr. Mufti Mahmud, Director of the Cognitive Computing and Brain Informatics (CCBI) Research Group at Nottingham Trent University (UK), and Prof. Kanad Ray, Director, Amity Cognitive Computing and Brain Informatics Centre, Amity University Rajasthan, signed the MoU. This MoU paves the way for collaborative research and the exchange of ideas between these prestigious institutions. The signing was witnessed by notable dignitaries, including the Vice Chancellor; Pro-Vice Chancellor; Vice President of Amity Science, Technology & Innovation Foundation (ASTIF); Registrar; Deans; Directors; and Coordinators.