COGNITIVE SCIENCES

INDIAN INSTITUTE OF TECHNOLOGY KANPUR

Placement Brochure 2025-2026

About Us

What is Cognitive Science?

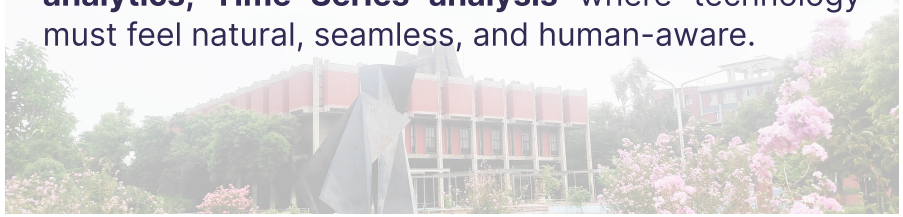
Cognitive Science is the scientific study of **intelligence, mind,** and **machines**. At its core, it explores how people perceive, make **decisions, think** and **learn** by blending insights from **AI, computer science, neuroscience, psychology** and **linguistics**.

What we do

At our department, we turn cognition into computation. Our students are trained to model **human mind as computational cognitive systems** in order to predict human behavior.These cognitive systems power **AI, Intelligent Systems, Natural Language Processing, human-centric interfaces** and **behavioral analytics.**

Application

From developing **human behavior-centric designs** to **neuro-inspired algorithms**, our graduates work at the intersection of **machine learning** and **mind science**. Their skills make them uniquely suited for roles in **AI-driven product design, cognition-inspired UI/UX, adaptive systems,** and **explainable AI, Data analytics, Time Series analysis** where technology must feel natural, seamless, and human-aware.



From the Head Of Department

Prof. Devpriya Kumar

"The Cognitive science department is a collective of visionary students who realise that outstanding problems require interdisciplinary thought and application. We believe in a multidimensional outlook: with access to insights from various fields, our students are poised to build more realistic models of human behaviour that are fine-tuned to accommodate real world causal relations.

With use cases in almost every imaginable field, ranging from neuro-marketing, data visualisation, and UX/VR environment design to development of emotionally intelligent and trustworthy AI systems, we host a protean bunch ready to revolutionise our rapidly evolving society."

What we do

Language & AI

We work at the intersection of **language science** and **machine intelligence.**
We build **language models, conversational agents,** and **multilingual AI systems** that help machines **communicate more like humans**.
We work on **language behavior analytics and build sentiment analytic tools.**

Empirical Research

We conduct **behavioral** and **neural research** to understand **attention, addiction, FOMO, bias**, and **decision-making**.
These insights drive **human-centric product design**, enabling **emotion-aware, habit-forming**, and **ethically optimized digital experiences**.

Computational Models of Behavior

We create models that simulate human behavior using **Agent-Based Systems**, **Bayesian Reasoning**, and **Statistical Decision Models**. We predict **decision-making, perception,** and **action**, enabling realistic simulations, **user modeling**, and **behavioral forecasting** for **adaptive systems, recommendation engines,** and **behavior-aware AI**.

Perception & Design

We study **visual, auditory**, and **multisensory perception** and **neuroscience** to design **cognitively easy** interfaces.
Using **cognitive load analysis, eye-tracking**, and **human-in-the-loop testing**, we craft intuitive **UI/UX** and enable **seamless human-technology interaction**.

What We Offer

We combine scientific rigor with practical engineering, making us uniquely suited for roles in AI, HCI, product design, data science, and behavioral strategy among many other domains.

Here's what we bring to the table in terms of applications

Data Science and Time series Analysis

With deep exposure to data modeling, Bayesian reasoning, and time-series or sequential data analysis. We hold skills fit for

Data Science
Statistical Modeling and Inference
Signal Analysis / Processing
Multi-Modal Data and feature engineering

We work with,

Bayesian and probabilistic modeling and inference
Multivariate analysis
Cognitive signal Interpretation.

Language Processing in Humans and Machines

We study language behavior in humans and Large Language Models

Decoding and understanding linguistic knowledge developed by LLM (Explainable AI or XAI)
Symbolic AI, Cognition Inspired NLP.

Understanding of the language is what fuels and drives our applications of natural language processing.

Cognitive Ease: The Core of Intuitive UI/UX

We design human-first interfaces by applying perception science for easy comprehension and cognitive load theory to minimise user effort. We are equipped to:

Conduct eye-tracking and perception testing
Optimize for mental model alignment
Create frictionless user journeys across diverse devices.

What We Offer

Cognition-empowered Software Engineering

We build cognition-aware software for psychometric testing, cognitive assessment, and workload analysis. These tools support talent development, skill profiling, and human-AI collaboration in modern enterprise environments.

Full-stack development for research tools
Python, R, and MATLAB prototyping and analysis.
Behavior-integrated backend systems.

User behavior modeling for businesses

We leverage advanced decision-making modeling and behavioral economics to help businesses. We understand complex **consumer choices** and help guide businesses toward optimal outcomes and boosting client retention and growth leveraging behavior modeling.

We leverage **Agent-based simulations**
Computational behavioral models
Bias & decision-making frameworks.

Strategy & Product Thinking for EdTech

We develop EdTech solutions grounded in cutting-edge research on how humans learn, remember, and stay motivated. This ensures our programs not only deliver superior academic outcomes but also directly enhance career readiness and placement success.

We use **Gamified learning architectures**
Cognitive scaffolding strategies
Retention-boosting content flows.

What we possess

Computational Skills

- Statistical Data analysis and inference
- Bayesian modeling and inference
- Programming
- Artificial Intelligence and Machine learning
- Natural Language Processing (NLP)
- Cognitive ease in UI/UX
- Behavior analytics and modelling
- Computational models of human cognition

Technologies we use

PyTorch

Other Skills

- Experimental Design & Research Methods
- User Empathy & Human-Centered Thinking
- Ethical and Responsible AI Thinking
- Cognitive Task Analysis
- Ethical and Responsible AI Governance and studies
- Human - computer interaction dynamics

Courses we undertake

- Deep Learning for computer vision
- Basic Statistics, Data Analysis & Inference
- Big Data Visual Analytics
- Statistics and data analysis using R
- Machine Learning
- Experiment Design and Analysis
- Bayesian Models
- Mind: Philosophical Investigations
- Basics of EEG
- Probabilistic Machine Learning
- Human-Centered Computing
- Computational Tools for Cognitive Science
- Statistical Natural Language Processing
- Eye-Tracking and VR
- Cognitive Neuroscience
- Computational Cognitive Science
- Human-Computer Interaction
- Foundations of Cognitive Science

Lab Facilities

AR/VR Lab

We study body movement using VR and eye-tracking.

High Density EEG Lab

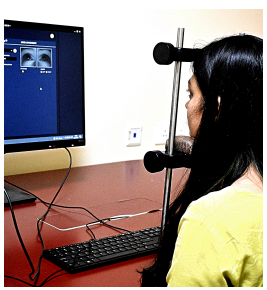
We use 128-channel EEG and 8-channel EGG to study brain–body interactions for smarter, human-aware systems.

Language & Eye-Movement Lab

We use high-speed eye-tracking to study reading and gaze behavior in native and non-native speakers.

Non-invasive brain stimulation lab

We use TMS with neuronavigation to target brain areas using individual MRI data.



Attention & Eye-Movement Lab

We use a 250Hz eye-tracker to study visual attention through pupillometry and psychophysics.

Action lab

We use VR, hand and face tracking to study action, agency, and multimodal integration.

Our People Work At

MathWorks

EY

accenture

EPFL

AXTRIA
INGENIOUS INSIGHTS

kore.ai

CISCO

BYJU'S

SP
Paathshala
TRAVAIL BEYOND EXCELLENCE

Moveworks
Instant help at work.

HARYANA PARIVAR PEHCHAN AUTHORITY
हरियाणा परिवार पहचान प्राधिकरण

LIONBRIDGE

outsystems

Reliance
RETAIL

SIEMENS

eemagine
medical imaging solutions

Research Projects

List of Funded Projects

- Designing a Predominantly Auditory Recommendation System
- Testing the Explanatory Limits of Limited Value Representations
- Improving Software for Grain Analysis Analysing Grievances Data Using Artificial Intelligence
- Assessment and Extension of Subsumption Architecture in the Context of Adaptive Shielding of Mobile Assets Using Multi Robot System
- Information Management System for Grievance Portal For PMO, Government of India
- Anomaly Detection in Exam Logs
- Digitizing and Automating Pli Information Management Systems
- Upgrading Darpg Information Systems with AI Capabilities
- Enabling Intelligent and Interactive Grievance Analysis at The Ministry of Defence
- Characterizing The Evolution of Naming Conventions in India
- Role of painkillers in unpleasantness-driven decision-making
- Using Gut-Brain coupling for holistic characterization of Neurocognitive states and development of treatment strategy in Depression

Programs We Offer

MTech IN COGNITIVE SYSTEMS

2 Years Program

Comprises of rigorous coursework followed by a year of research. Courses often include advanced-level group projects and /or individual project

MS (BY RESEARCH) IN COGNITIVE SCIENCE

2 /3 Years Program

Similar to the M.Tech Program, with more emphasis on research. Besides fundamental research, students work on many challenging industry-oriented projects

PhD IN COGNITIVE SCIENCE

5 Years+ Program

Highest degree awarded by the department for students interested in research careers. Its focus, unlike other degrees, is more towards generating new knowledge than learning extant knowledge

Faculty

THE CORE

Dr. Narayanan Srinivasan

PHD,PSYCHOLOGY,
UNIVERSITY OF GEORGIA

Dr. Nisheeth Srivastava

PHD, COMPUTER SCIENCE,
UNIVERSITY OF MINNESOTA

Dr. Devpriya Kumar

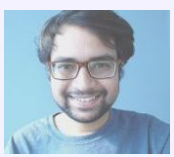
PHD,COGNITIVE SCIENCE,
CBCS

Dr. Ark Verma

PHD,PSYCHOLOGY,
UNIVERSITEIT GHENT

Dr. Pragathi P. Balasubramani

PHD, COMPUTATIONAL
NEUROSCIENCE, IIT MADRAS



Dr. Himanshu Yadav

PHD,COGNITIVE SCIENCE,
UNIVERSITY OF POTSDAM

Dr. K. M. Sharika

PHD, NEUROSCIENCE,
NATIONAL BRAIN RESEARCH
CENTRE

Dr. Anveshna Srivastava

PHD, SCIENCE EDUCATION,
HBCSE, TIFR, MUMBAI

ADJUNCT FACULTY

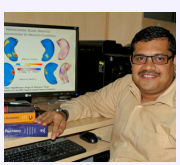
Dr.Arjun Ramakrishnan

PHD, NEUROSCIENCE, NATIONAL
BRAIN RESEARCH CENTRE

Dr. Sruti Srinivasa Ragavan

PHD ,COMPUTER SCIENCE,
OREGON STATE UNIVERSITY

VISITING FACULTY



Dr. Ganesan Venkatasubramanian

PHD, PSYCHIATRY, NIMHANS

Contact Us

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