IIT Mandi iHub & HCL Foundation organizes Fourth Edition of Winter School on Cognitive Modeling

The three days event featured engaging sessions to understand different tools for creating cognitive models and exposed researchers to the state-of-the-art models in basic and applied domains

Mandi, 21st October 2022: Indian Institute of Technology Mandi iHub and HCI Foundation recently organized the Fourth Edition of Winter School on Cognitive Modeling at IIT Mandi campus in hybrid mode.

In the three days long events, speakers from IIT Mandi, IIT Delhi, IIT Roorkee, and international speakers from the University of Groningen, Stanford University, University of Waterloo, and Carnegie Mellon University trained and guided students on the best practices in the field of Cognitive Modeling. This was sponsored by Hospimedica Group of Companies, New Delhi, India.

Cognitive Models are essentially theories of how people make decisions, implemented through computer simulations. Cognitive modeling studies human cognition by creating models of cognitive behavior. It also allows an individual to understand the effects of existing designs on human cognition and how improvements to existing designs could in turn enhance human cognition. This knowledge could be applied to developing interventions in varied applied domains.

Speaking during the event, Dr. Varun Dutt, Associate Professor, School of Computing and Electrical Engineering, IIT Mandi, said, "This 4th edition of Winter School was like a dream come true as it provided participants the diverse knowledge in areas like the drift-diffusion models, mindfulness, meditation, neuro-scientific aspects of the brain, and topics like ACT-R and their application in real life. These topics are important for cognitive science and human-computer interaction areas."

This year, around 75+ participants joined the Winter School from different parts of the country. Among all the speakers, Prof. Marieke van Vugt from the University of Groningen joined the Winter School in person at the IIT Mandi campus. Rest all the Speakers from different IITs, and International Universities joined it virtually

Objectives of the Winter School

Ø To provide a forum to train students, researchers, and professionals on the best practices in the area of cognitive modeling

Ø Expose researchers to state-of-the-art models in basic and applied domains

Ø Involve top international researchers in the area of cognitive modeling to present their work as part of the winter school

This year's Winter School featured many national and international speakers. These include:

> Ø Prof. Percy Mistry from Stanford University, California
>
> Ø Prof. Marieke van Vugt from University of Groningen, Netherlands
>
> Ø Prof. Terrence Stewart from the University of Waterloo, Canada
>
> Ø Prof. Cleotilde Gonzalez from Carnegie Mellon University, Pennsylvania
>
> Ø Prof. Niels Taatgen from University of Groningen, Netherlands
>
> Ø Prof. Tapan Gandhi from the Indian Institute of Technology Delhi, India
>
> Ø Prof. Varun Dutt from the Indian Institute of Technology Mandi, India
>
> Ø Prof. Shubhajit Roy Chowdhury from Indian Institute of Technology Mandi, India
>
> Ø Prof. Aditya Nigam from the Indian Institute of Technology Mandi, India
>
> Ø Mr. Anmol Gupta from IIT Roorkee
>
> Ø Dr. Gaurav Jaswal from IIT Mandi iHub and HCI Foundation
>
> Ø Mr. Kulbhushan Chand from IIT Mandi iHub and HCI Foundation
>
> Ø Mr. Eshwar Ghumare, Product Manager, Research Solutions, ANT NEURO

The Winter School featured engaging sessions to understand different tools for creating cognitive models, which include Nengo (neural simulator), PyIBL (used to model human decisions from experience), fMRI, and Neurocognitive Modeling. Additional discussed sessions include stroke diagnosis, drift-diffusion models, introduction to PRIMs, and deep learning models on EEG analysis, etc.

Winter School provided a platform where expert speakers from different corners of the world came together and shared their knowledge with participants who were present both online as well as in offline mode. As a result, participants could now think out of the box about different research areas in cognitive modeling, deep learning, meditation, and mindfulness. It also provided a good platform to participants where they could approach the experts directly in these fields and discuss their questions with them.

About IIT Mandi

IIT Mandi has nine Academic Schools and four major Research Centers. The Schools are School of Biosciences and Bioengineering, School of Chemical Sciences, School of

Mathematical and Statistical Sciences, School of Physical Sciences, School of Mechanical and Materials Engineering, School of Civil and Environmental Engineering, School of Computing and Electrical Engineering, School of Humanities and Social Sciences, and School of Management. The Centers are Advanced Materials Research Centre (AMRC; set up with an investment of Rs. 60 crores), Centre for Design and Fabrication of Electrical Devices (C4DFED; has Rs. 50 crores worth of fabrication tools), BioX Centre (has acquired research equipment worth Rs. 15 crores), and Indian Knowledge System and Mental Health Applications Centre (IKSMHA Centre).

The Institute offers B.Tech. programs in seven different streams, one M.A. program, three M.S. programs, ten M.Tech. programs, three M.S. (by research) programs, four Ph.D. programs, and one iPh.D. program. The unique, project-oriented B.Tech. curriculum is centered around its 4-year long Design and Innovation stream. Since the inception of the Institute, IIT Mandi faculty have been involved in over 275 Research and Development (R&D) projects worth more than Rs. 120 crores.

IIT Mandi set up the IIT Mandi iHub and HCI Foundation (iHub; a section-8 company) on its campus at Kamand with a significant funding of INR 110 crores from the Department of Science and Technology (DST), Government of India. The iHub is planned to fuel research and technology development, skill development, startup and innovation, and collaborations in the HCI and allied AI/ML areas in India. IIT Mandi is the only second-generation IIT to be featured at rank 7 in the Atal Ranking of Institutions on Innovation Achievements of the Innovation Cell, Ministry of Education, Govt. of India.

Twitter: @iit__mandi
Facebook: IIT Mandi
Website: https://www.iitmandi.ac.in