CENTER OF EXCELLENCE
“ARTIFICIAL INTELLIGENCE”

RESEARCH ACTIVITIES & EVENT

IGDTUW-DELHI

INDIRA GANDHI DELHI TECHNICAL UNIVERSITY FOR WOMEN

INDIRA GANDHI DELHI TECHNICAL UNIVERSITY FOR WOMEN

(Established by Govt. of Delhi vide Act 09 of 2012)

MOTTO: EDUCATION - ENLIGHTENMENT - EMPOWERMENT

COE-AI VISION

To Disseminate high quality Research and take eGovernance to the next level, by making use of AI Technologies like Computer vision, Natural Language processing and Conversational AI like chatbots and voice-bots, facilitating convenience and ease of use of facilities by Citizens and empowering Government to understand citizens' requirements by harnessing their feedback in social media and other forms of unstructured data like images, videos and documents.

IGDTUW Catalizes Quality Academic Research

Robust ecosystem of Research for the Students & Faculty

BEST PRACTICES ADOPTED IN IGDTUW
Center Of Excellence- Artificial Intelligence

IGDTUW

2021
Research Activities & Prestigious Collaborations
SDG: Clause 17 (NEP)

1. Research Projects
2. Initiatives Undertaken
3. Research oriented MoUs, Cotutelle & Incentives
4. Workshops, Events & Invited Talks

COE-AI: Initiatives undertaken

Establishment of New Department – AI & Data Science

Strength: 150 students

Objective:

- Promote Women in Stem
- Boost Women in Research & Development in the domain area of disruptive technology
- Meet contemporary need of Industries

MTECH CSE-AI

Career pathways

- **Reseacrh Track**
- **Entrepreneurship track**
- **Application track**

BTECH CSE-AI

INDUSTRY ORIENTED COURSE CONTENT

CBCS ELECTIVE COURSES

- Artificial Intelligence
- Machine learning
- Deep learning
- Neural Networks and Fuzzy logic
- Natural language processing and
- Speech technology etc.

COE-AI: Undergoing/Submitted Research Projects

India-Philippines Project Proposal "Building Voice enabled System for the elderly and the Differently-able persons using Artificial Intelligence" **(Submitted)**

Sanskrit knowledge Accessor NLTM-MeiTY (Submitted)

Automatic Speech Recognition on Punjabi, Hindi language NLTM-MeiTY

Real-Time Automatic Speech Recognition System using Deep Neural Network under Speech & Language processing lab-COE-AI.(Undergoing)

CFSL Project Proposal "Automatic Approach for Real-Time face Recognition" (Undergoing)

COE-AI: Research Highlights- Undergoing Key Research Areas

- PATENT: **"A Fuzzy Entropy-Based Method for Classification and Selection of Multi-Faceted Test Case of Software".** Patent number: 2021105543 (Australian Patent granted)
  Name of inventor(s): Pachariya, Manoj Kumar; Sharma, Arun and Kumar, Rajesh
- Automatic Speech Recognition and Text-Independent Speaker Identification using Deep Learning, Pooja Gambhir, Supervisor: Dr. (Mrs.) Amita Dev.
- Emotion's recognition and Emotions Conversion, Surbhi Khurana, Supervisor: Dr. (Mrs.) Amita Dev.
- Text-based Machine translation for Indian and Ancient languages (Sanskrit), Nandini Sethi, Supervisor: Dr. (Mrs.) Amita Dev.
- To design and develop an enhanced classification approach for large datasets (hyperspectral images)., Garima Jaiswal, Supervisor: Dr. Arun Sharma.
- To Design and development of an efficient network resource-friendly edge enabled framework using Federated Learning., Ms. Monalisa, Supervisor: Dr. Arun Sharma.

COE-AI: Research Oriented MoUs & Cotutelle

- NARA INSTITUTE OF SCIENCE & TECHNOLOGY: NAIST, JAPAN
- CENTRE OF FORENSIC SCIENCE LABORATORY-CHANDIGARH & FORENSIC SCIENCE LAB-DELHI
- COTUTELLE- JAMES COOK UNIVERSITY, AUSTRALIA
- COLLOQUIUM: PROJECT COLLABORATIONS WITH VARIOUS INSTITUTES UNDER NLTM-MeiTy
- Universiti Malaysia Perlis

Student's Professional Upliftment

Scholarships/Stipends

Financial Assistance of Rs. 7,500/ per month (Top 10 students per branch) - Non GATE students pursuing M.Tech./M.Plan.

AICTE PG scholarship @ Rs 12400 per month – GATE Scholars

Rs. 5,000/- for every Research Publication in SCOPUS Index Journal (UG & PG Students)

Rs. 10,000/- for every Publication in SCI/SCI-E Index Journal (UG & PG Students)

Student Activities & Participation

AI Club, Technical Societies, Cultural Societies, ACM Chapter, SAE International Student Chapter

Social Outreach programs- Mentorships & Leadership

Anveshan Foundation- Start-ups & Incubation Center Entrepreneurial Activities

Encourage Student to follows Industry & Research Intensive Activities

Catalizing Quality Academic Research with Research Awards & Scholarships

Outstanding Research Scholarship

IGDTUW JRFs: Rs. 38,000
IGDTUW SRFs: Rs. 44,000

Financial Support & Monthly Stipend @10,000/- to Full time Ph.D. scholars

UGC scholarships

JRF-Rs 31,000/- per month (plus HRA)
SRF-Rs 35,000/- per month (plus HRA)

PREMIER RESEARCH AWARDS

Cash Price: INR 25,000/-

COMMENDABLE RESEARCH AWARDS

Cash Price: INR 15,000/-

OUTSTANDING RESEARCH AWARDS

Cash Price: INR 50,000/-

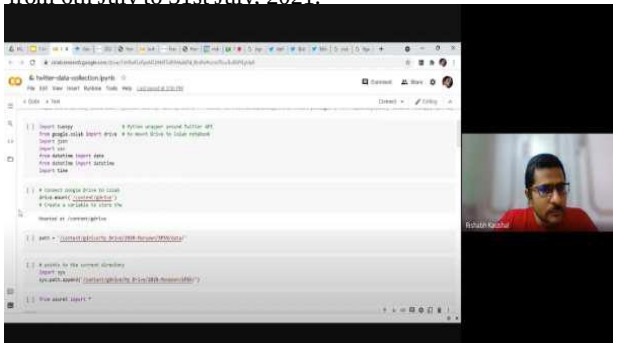
MOTIVATIONAL RESEARCH AWARDS

Cash Price: INR 10,000/-

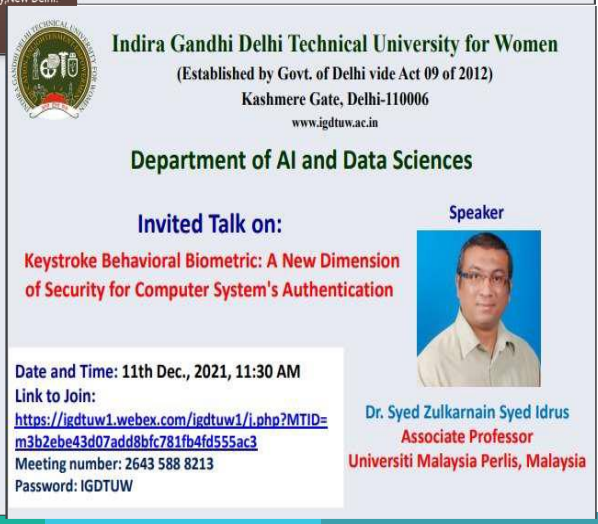
COE-ARTIFICIAL INTELLIGENCE WORKSHOPS, EVENTS & INVITED TALKS

COE-AI: Research led Invited Talks conducted, 2021

4 weeks Summer Internship on Machine Learning and Deep Learning IGDTUW, Delhi organized an Internship Programme on **"Machine Learning and Deep Learning"** from 6th July to 31st July, 2021.



The 14th National Workshop on Recent Trends in Software Testing was conducted with joint collaboration of **IGDTUW**, **New Delhi** and **National Institute of Technology, Rourkela**. **Uttar Pradesh**.



COE-AI: 3rd International Conference AIST 2021

Technical Tracks

1. Trends and Applications in Speech Processing
2. NLP and its applications
3. Applications of Machine Learning and Deep Learning in Healthcare
4. Recent Trends in Machine Learning and Deep Learning
5. Analysis using Hybrid Technologies with Artificial Intelligence
6. Image Analysis using Machine Learning and Deep Learning
7. Recent advancements using Hybrid Technology

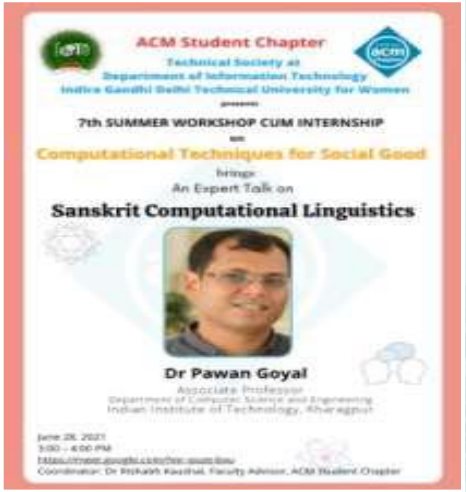
Indira Gandhi Delhi Technical University for Women organized the third season of the International Conference on Artificial intelligence and Speech Technology (AIST-2021). The event was held on 12th and13th November 2021 which witnessed a great success, guided by many eminent guests and speakers from international levels such as Germany, France, Netherlands, etc. More than 183 papers were received in the AIST 2021 Conference and total of 55 papers were selected, presented in the Conference by the Springer CCIS Edition. There were Seven technical tracks in which the selected papers were presented in their respective tracks. Each track had eight to nine papers being presented by the authors.

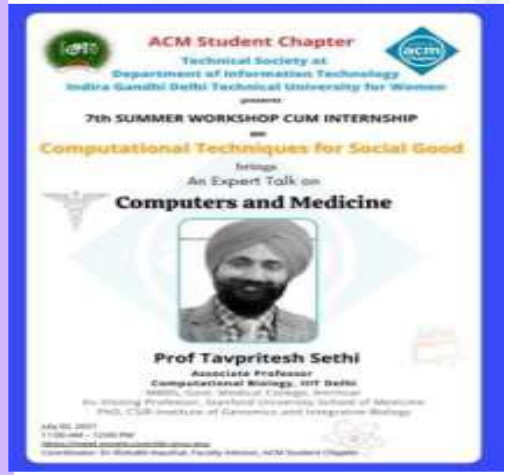
COE-AI: Events & Activity highlights 2021, conducted by AI Club

IGDTUW AI Club in collaboration with Women in Big Data – India Chapter organized a two-day workshop on **"Introduction to Data Analysis Using MS Excel"** on 22nd& 23rd January, 2021.

IGDTUW AI Club presented AI Kickstart, a five day camp **on "Introduction to Python and Machine Learning"** from 11-17 April 2021

COE-AI: Events & Activities highlights 2021 conducted by ACM Chapter





COE-AI: Events & Activities Highlights, 2021 conducted by Technical Societies

We at Enactus India are very happy and excited to celebrate you and the positive impact you have created this year through the **2021 Enactus India Online National Competition, 14-21 August 2021.**

Given the uniqueness of the past year we are introducing a new vertical at this year's National Competition for **Early Stage Projects!**

There will be no qualifying round and **all teams are invited to participate.**

COE-AI: Events & Activities Highlights, 2021 conducted by Campus Departments

Indira Gandhi Delhi Technical University for Women, Delhi-110006
Department of Computer Science and Engineering
Presents
Expert Session on
'Engineering the Internet of Things'
08th January, 2021 11:00 AM – 12:00 Noon (Cisco Webex)

HoD:
Prof. S R N Reddy,
CSE Department,
IGDTUW, Delhi.

Organizer:
Prof. Devendra K Tayal,
CSE Department,
IGDTUW, Delhi.

Speaker: Prof. Bhaskar Krishnamachari, Professor, University of Southern California, United States.

He serves as the founding director of the USC Viterbi Center for Cyber-Physical Systems and the Internet of Things (CCI) and as co-director of the USC Center for Human Applied Reasoning and the Internet of Things (CHARIOT). He works on the design of algorithms, protocols, and applications for the internet of things and distributed systems.

Meeting Details: Meeting number: 158 020 7279, Password: IGDTUW
Link: https://igdtuw1.webex.com/igdtuw1/j.php?MTID=mb5d8b9a3d71e4988ddfb15ab05b27f7c

Indira Gandhi Delhi Technical University For Women
(Established by Govt. of Delhi vide act 9 of 2012)
An ISO 9001:2015 Certified University
hosts
Webinar on
'Learning with Weak Social Supervision for Fake News Detection'

Date:
29th January, 2021
Time:
7.30 PM - 8.30 PM (IST)
Platform:
Cisco Webex

Meeting Link (click on the link)
https://igdtuw1.webex.com/igdtuw1/onstage/g.php?MTID=e13c847d8f1cce49f0bff28cf3501240b
Event number:158 220 5533
Event Password: IGDTUW

Speaker: Dr. Kai Shu, Assistant Professor, Department of CS, Illinois Institute of Technology, Chicago, US

Brief Bio: Kai Shu is a Gladwin Development Chair Assistant Professor in the Department of Computer Science at Illinois Institute of Technology. His research lies in machine learning, data mining, social computing with applications such as disinformation, education, and healthcare. He obtained his PhD in Computer Science at Arizona State University.

Patron	Advisor	Coordinators
Dr. (Mrs.) Amita Dev Hon'ble Vice Chancellor, IGDTUW	Prof. S.R.N. Reddy Professor & HOD, CSE, IGDTUW	Ms. Monika Choudhary Ms. Vibha Pratap Assistant Professor, CSE, IGDTUW

INDIRA GANDHI DELHI TECHNICAL UNIVERSITY FOR WOMEN
"Artificial Intelligence... creating the future"
An Expert Lecture On
AI IN MEDICINE AND PUBLIC HEALTH
EMINENT SPEAKER.....

DR. TAVPRITESH SETHI
Founding Head, Center of Excellence in Healthcare, IIIT-Delhi,
Wellcome Trust/DBT India Alliance Fellow,
AIIMS, New Delhi
DATE:17 JUNE 2021,
TIME:3:00PM-4:00PM
ORGANISED BY:
DEPARTMENT OF APPLIED SCIENCES AND HUMANITIES

VIRTUAL LAB VISIT & HANDS ON SESSION
on
ANALOG & DIGITAL ELECTRONICS

Organized by
INDIRA GANDHI DELHI TECHNICAL UNIVERSITY FOR WOMEN, DELHI
(KNOWLEDGE PARTNER OF VIGYAN JYOTI SCHEME, DST)
FOR
JAWAHAR NAVODAYA VIDYALAYA, JAFFARPUR KALAN, DELHI
14th January 2021, Thursday
(11:00 AM - 1:00 PM)

The department has following well equiped laboratories in related fields and students will be exposed to various practical assignments in the area of Electronics and Communication

- DSP Lab
- Communication Lab
- Analog Electronics Lab
- Microwave Lab
- Tele Communication Networks Lab
- Micro processor Lab
- Digital Circuit & Systems Lab
- Electrical Science Lab/ Control Engineering Lab
- Circuit & Systems Lab
- Mobile Communication Lab
- VLSI Design Lab
- Optical Communication Lab

PLATFORM-GOOGLE MEET
Link for Joining:
https://meet.google.com/upw-iccc-ahx

A Knowledge Exchange in STEM (Science Technology Engineering Mathematics) field among selected girls of NVS & JNV

Chief Patron: Dr. Amita Dev (Vice Chancellor, IGDTUW)

Patron: Prof. Ashwani Kumar (Registrar, IGDTUW)

Programme Officers: Prof. Jasdeep Kaur & Prof. Nidhi Goel

WOMEN IN BIG DATA - INDIA CHAPTER
IN COLLABORATION WITH
INDIRA GANDHI DELHI TECHNICAL UNIVERSITY FOR WOMEN
KASHMERE GATE DELHI-110006
CALLS FOR REGISTRATION
FOR A TWO DAY WORKSHOP ON
INTRODUCTION TO DATA ANALYSIS USING MS EXCEL
TWO INDUSTRY EXPERT TALKS

Time:
1:15-2:30PM

Dr. Ruchi Saxena
Director
Elecrobotica
Piyush Sharma
Global CEO,
E-Suite Advisor

Zoom Link: https://zoom.us/j/92009291188?pwd=aEcvVTlUL2JIRnE2VXdXY2dzNWVMdz09
FOUR DATA ANALYSIS SESSIONS BY

Session 1:
9:30AM to 12PM
Session 2
3 PM to 5:45PM

Ashutosh Sundaram
Ex-Hippocampus, Ex-Hewlett-Packard, Ex-Symphony Marketing Solutions
Prasanna Sundaram
Teach For India Alumni, Ex-Genpact, Ex-IIM-Symphony Marketing Solutions

Zoom Link: https://zoom.us/j/96106065443?pwd=VEdTbHc2YkdwNlVEVS1TOUhlb2U4dz09
DATES: 22nd and 23rd January 2021
THE PARTICIPANTS WILL BE GIVEN E-CERTIFICATES ON SUCCESSFUL COMPLETION.
Register at: https://cutt.ly/qzmkeY

Indira Gandhi Delhi Technical University For Women
(Established by Govt. of Delhi vide act 9 of 2012)
An ISO 9001:2015 Certified University
Department Of Computer Science & Engineering
Hosts
A Webinar on
Evolutionary Intelligence in Engineering

Resource Person:
Amir H. Gandomi
Professor of Data Science, Faculty of Engineering & Information Technology, University of Technology Sydney, Australia.

Date: 17th July, 2021
Time: 5.30 PM - 7.00 PM IST (Indian Standard Time)

Mode of Webinar:
Online (Webex or Zoom App)
Registration Link:
https://forms.gle/76CtqGT55orUMn8T8
No Registration Fee.
E-certificate will be provided to the participants.

Patron
Dr. (Mrs.) Amita Dev
Hon'ble Vice Chancellor, IGDTUW
Advisor
Prof. Seeja.K.R
Professor & HOD, CSE, IGDTUW
Coordinators
Dr. Ravinder.M
Assistant Professor, CSE, IGDTUW
Ms. Monika Choudhary
Assistant Professor, CSE, IGDTUW
Ms. Khyati Ahlawat
Assistant Professor, CSE, IGDTUW

COE-AI: FDP's and Internship workshops 2021

One Week online Faculty Development Programme
On
Machine Learning and Deep Learning Applications

Under the banner of

INDIRA GANDHI DELHI TECHNICAL UNIVERSITY FOR WOMEN (IGDTUW)

1st- 5th February, 2021

Patron
Dr. (Mrs.) Amita Dev
Hon'ble Vice Chancellor, IGDTUW

Advisor
Prof. S.R.N. Reddy
Professor & HOD, CSE, IGDTUW

Coordinators
Dr. Ravinder.M
Assistant Professor, CSE, IGDTUW
Ms. Vibha Pratap
Assistant Professor, CSE, IGDTUW
Ms. Monika Choudhary
Assistant Professor, CSE, IGDTUW

Organized by
Department of CSE, IGDTUW, Delhi.

Organizing Committee
Prof. Ela Kumar
Prof. D. K. Tayal
Prof. Seeja.K.R.
Mr. B. Indira Thanuaya
Ms. Najme Zehra Naqvi
Dr. Vivekanand Jha
Dr. Arunima Jaiswal
Ms. Khyati Ahlawat

About IGDTUW

Indira Gandhi Delhi Technical University for Women (IGDTUW) has been upgraded from Indira Gandhi Institute of Technology in May 2013 vide Delhi State Legislature Act 9, 2012, as a non-affiliating teaching and research University at Delhi to facilitate and promote studies, research, technology, innovation, incubation and extension work in emerging areas of professional education among women, with focus on engineering, technology, applied sciences, management and its allied areas with the objective to achieve excellence in these and related fields. The objective of the University is to foster industry relevant research and innovation and empower the women of our country through value based higher education making them employable, self-reliant, responsible citizen of the country with concern for environment and society.

About Department of CSE

The Computer Science and Engineering Department is the most versatile department of college and caters to the needs of other departments as well. The department aims at developing the fundamental conceptual knowledge along with the total personality, which helps computer engineers to face the challenges of rapidly changing software industry. Numerous professional activities are conducted to improve interaction between students, faculty, other academic institutions and industries. The Department offers B.Tech, M.Tech (AI), and Ph.D Courses.

Objective and Scope

This Faculty Development Programme (FDP) is devoted to addressing the need to enhance the knowledge about the latest technologies pertaining to Machine Learning (ML) and Deep Learning (DL) that are usually considered as the subsets of Artificial Intelligence (AI). Deep learning is a subset of machine learning that has networks capable of learning unsupervised/supervised from data that is unstructured or unlabeled. It imitates the workings of the human brain in processing data and creating patterns for use in decision making. The objective of this FDP is to introduce the participants to the world of Machine Learning and Deep Learning and give an insight on how and where it can be used.

- The objective of the FDP is to introduce fundamentals Machine Learning and Deep Learning.
- This FDP will be a very useful platform for Faculty and researchers to update their knowledge
- The FDP also focuses on exploring various research opportunities and challenges in the field of Machine Learning and Deep Learning.

Topics to be covered

- Introduction to Machine Learning and Deep Learning.
- Supervised Machine Learning Applications
- Un-Supervised Machine Learning Applications
- Reinforcement Learning.
- Deep Learning Applications