



Summer School on STATISTICAL DATA ANALYTICS & DEEP LEARNING-V2

📅 1 – 5th June 2026 (Online Mode)

Learning in the mountains during Hot Summer

This program is intended for scholars and working professionals from any discipline who already have a basic familiarity with data analysis and deep learning. The first edition, held from June 23–27, 2025, was conducted with great success. Building on that, this second edition offers an expanded and more in-depth set of topics. Details of the first edition are available here: <https://research.iitmandi.ac.in/masterclass/>

Our objective is to equip participants with a strong conceptual foundation and then introduce major application areas across a range of domains. The program will conclude with a hands-on, real-world project, allowing participants to translate what they have learned into practical problem-solving experience.

Key Speakers from • **SMSS Faculty, IIT Mandi**

Module 1: Foundations for AI (Day 1)

- Python for AI (NumPy, Pandas, TensorFlow/PyTorch)
- Probability & statistics (basics)
- Data visualization & preprocessing: case studies
- Regression & classification fundamentals
- Model evaluation (ROC, RMSE, F1)

Module 2: Neural Networks & Core Architectures (Day 2)

- Neural network fundamentals & training
- CNNs for spatial data
- RNN, LSTM, GRU for sequential data
- Image and time-series applications

Module 3: Improving Deep Neural Networks (Day 3)

- Optimization (Adam, learning rate scheduling)
- Regularization (Dropout, BatchNorm, L1/L2)
- Hyperparameter tuning
- Transfer learning & fine-tuning
- Handling overfitting & small datasets

Module 4: Attention & Transformers (Day 4)

- Attention mechanism
- Seq2Seq & encoder-decoder models
- Self-attention & transformers
- BERT/GPT overview
- Vision & time-series transformers

Module 5: AI models & Applications (Day 5)

- Attention-based AI models
- Case study: rainfall / air pollution / temperature prediction
- Case Study (Projects): Predicting Rainfall / Air Pollution / Temperature

Bonus Module: Application and Case Study

- Case Study: Predicting Rainfall / Air Pollution / Temperature

Registration Fees

INR 4000/-

Payment Info:

Deadline: June 1, 2026

UPI ID: 8290544445m@pnb

MERCHANT: IIT MANDI SRIC EXTENSION ACTIVITIES

Scan for payments:



Scan for registration:



<https://forms.gle/ppLTDC9KDFG5YHiWA>

Target Audience

- **Research Scholars (M.Sc./M.Tech/PhD.)**
- **Working Professionals**
- **Data Enthusiasts**

Organizers

Prof. Sarita Azad
Coordinator
SMSS, IIT Mandi, H.P. India
sarita@iitmandi.ac.in
<https://faculty.iitmandi.ac.in/~sarita/>

Dr. Rishikesh Yadav
Co-Coordinator
SMSS, IIT Mandi, H.P. India
rishikesh@iitmandi.ac.in
<https://sites.google.com/view/yadav-rishikesh>

Certificate of Completion:

will be awarded by IIT Mandi upon the successful completion of the masterclass.

**School of Mathematical & Statistical Sciences (SMSS)
Indian Institute of Technology, Mandi**