

- Ethical Dataset Design: Apply the Data Cards framework to ensure transparency, accountability, and community values.
- Module 3: Model Training & Societal Impact
- Training Dynamics: Diagnose and resolve common model training issues, such as overfitting and underfitting.
- Neural Network Labs: Implement and evaluate multilayer perceptrons (MLPs) to master backpropagation and classification mechanics.
- Applied Case Studies: Review real-world case studies demonstrating neural networks in production.
- Risk & Safety Assessment: Anticipate potential risks, safety concerns, and broader societal impacts of AI innovation.

Schedule

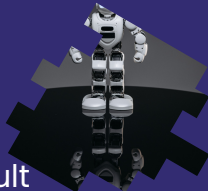
Program Starts: 21 September 2026

5 day sessions at IISc campus

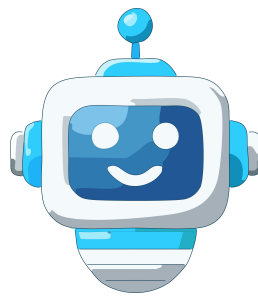
Program to continue in online mode upto December 2026.



Scan QR to apply



Limited Participants intake. Result announcement: 5 September 2026



Objectives and Syllabus

- Module 1: Language Model Fundamentals & ML Pipeline
- Core Concepts: Learn foundational language model concepts and the end-to-end ML development pipeline.
- Architecture Comparisons: Evaluate strengths and trade-offs of traditional n-gram models versus advanced transformers.
- Practical Coding Labs: Build hands-on insights into model mechanics to generate text and detect linguistic patterns.
- Engineering Case Studies: Examine how research engineers operate and apply responsible ML to community problems.
- Module 2: Text Preparation & Ethical Data Design
- Data Processing Techniques: Prepare and structure text using tokenization and embedding strategies.
- Mathematical Representations: Work with vectors and matrices to understand how models encode semantic meaning.
- Bias & Trade-Off Analysis: Evaluate critical data preparation decisions and mitigate potential dataset biases.



INDIAN INSTITUTE OF SCIENCE CENTRE FOR CONTINUING EDUCATION FACULTY DEVELOPMENT PROGRAM ON AI RESEARCH FOUNDATIONS



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