



**Vishlesan i-Hub**  
Indian Institute of Technology, Patna

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Learn in தமிழ்

# **CERTIFICATION IN APPLIED AI & ML ESSENTIALS FROM VISHLESAN i-HUB, IIT PATNA**



# About IIT Patna, Vishlesan i-Hub

**National Innovation Hub:** Vishlesan i-Hub at IIT Patna is part of a national mission, advancing AI in speech, video, and text analytics for sectors like health, education, and security.

**Premier Technical Institute:** IIT Patna is one of India's top engineering institutes, known for its cutting-edge research and strong academic foundation.

**Strong Industry & Research Ecosystem:** With active collaborations, incubators, and innovation hubs, IIT Patna bridges academia and industry to drive real-world impact.

## Program Overview

The foundations in Artificial Intelligence and Machine Learning Program is designed to accommodate learners from diverse academic and professional backgrounds. Through structured coursework and hands-on projects, students will build a solid understanding of Artificial Intelligence (AI) and Machine Learning (ML) techniques, starting from foundational mathematics and basic programming, progressing through core machine learning models, and culminating in cutting-edge AI applications. By the end of the program, participants will be able to confidently implement AI/ML solutions, interpret results, and address real-world problems across various domains.



# Why Choose This Course?

- **Prestigious Certification\***: Receive a Certificate of Completion with Vishlesan i-Hub, IIT Patna, significantly enhancing your profile's value.
- **Real-World Capstone Project**: Work on capstone projects designed to solve practical business challenges.
- **Expert Faculty & Industry Insights**: Learn from IIT faculty & industry experts bringing real-world insights to your learning journey.
- **Mentorship & Community Support**: Get guidance from experienced mentors and join a growing community of learners in technology.
- **For Every Learner**: Whether you're a student, working professional, or job seeker, this program makes AI-ML accessible without needing advanced English proficiency.
- **Delivery in Tamil**: Learn directly from mentors who speak your language and can simplify complex ideas with local analogies and examples.

*\*Certificate Eligibility: Minimum 65% overall attendance and 30% marks in cumulative evaluations score*

# What Will You Learn?

Begin your AI/ML journey with a beginner-friendly, industry-aligned curriculum from i-Hub, IIT Patna taught in Marathi. Covering everything from Python basics to advanced topics like deep learning and generative AI, the program builds real-world skills through hands-on projects and expert-led learning.

## Toolkit



# Course Summary

**Course Duration**  
4 months

**Weekly Commitment**  
6-8 Hours

**Certification**  
From Vishlesan i-Hub, IIT Patna

## Course Syllabus

### Module 1: Foundations of Data

Master the complete data workflow from first principles: understand where AI, ML, and GenAI fit in the bigger picture, get fluent with Git and modern development environments, learn Python as your data manipulation superpower, wrangle messy datasets using NumPy and pandas, query databases with SQL, tell compelling stories through visualizations, and pull live data from the web using APIs – all while building production-ready skills that matter from day one.

#### Mini Projects

- CryptoWatch: Real-Time Market Sentiment Tracker
- FoodSafety Insights: Restaurant Inspection Intelligence
- TrendPulse: What Is Actually Trending Right Now

### Module 2: Classical ML

Build your foundation in machine learning the right way: learn to frame real business problems as ML tasks, master the discipline of train-test splits and cross-validation, clean and prepare messy data while guarding against leakage, predict continuous outcomes with regression and categories with classification, understand when Linear Regression beats Random Forests and when the reverse is true, and develop the critical skill of choosing models based on metrics that actually matter to the business.

#### Mini Projects

- ChurnGuard: Predicting Customer Exit Before It Happens
- LoanLens: Automated Credit Risk Assessment
- RentRight: Predicting Fair Apartment Prices

### Module 3: GenAI and Agents

Master the art of building production-ready AI agents: understand how LLMs actually work under the hood (tokens, context limits, temperature), craft prompts that consistently deliver results using role-based instructions and chain-of-thought reasoning, build agents that can use tools and take actions on their own, structure their outputs with bulletproof JSON schemas and validation, wrap your agents in production APIs with proper error handling and logging, deploy them to the cloud, and run systematic evaluations to measure real-world performance before users ever see them.

#### Mini Projects

- DataGenie: Natural Language Data Analyst
- SupportAI: Intelligent FAQ Helpdesk Agent
- ResearchPilot: Automated Market Research Agent

### Capstone Project

One chat, multiple model answers side-by-side with cost/speed badges; toggle RAG for cited answers and add smart routing + A/B prompt.

## English & Soft Skills Training

### Everyday English for Self-Expression

Learn how to talk about yourself comfortably and confidently in common situations.

- **Talking About Your Present:** Learning to speak about who you are, your education/work, family, hobbies, routine and current activities in everyday situations, using the present tense
- **Talking About Past Experiences:** Forming clear sentences using the past tense to describe past education, work, choices, and general life experiences, clearly and confidently
- **Talking About Your Future:** Expressing future goals, plans, and actions in a simple and confident way with the future tense.
- **Connecting Past, Present, And Future:** Linking ideas while speaking, to connect past, present, and future naturally while maintaining flow and clarity

## Building Clear and Correct Sentences

Strengthen sentence formation so your English sounds natural and complete.

- **Applying Articles & Commonly Used Prepositions:** Using articles & prepositions accurately in everyday and professional contexts.
- **Describing Skills, People, and Situations With Adjectives:** Using adjectives and descriptive phrases to explain skills, qualities, roles, and situations more clearly.
- **Forming Longer, Meaningful Sentences:** Constructing complex sentences by joining ideas, instead of speaking in short or incomplete statements.
- **Speaking with Confidence in English:** Building confidence while speaking, by managing hesitation, self-correction, and fear of grammatical mistakes.

## Speaking with Impact and Awareness

Learn to organise thoughts, speak smoothly, and communicate with confidence.

- **Structured Speaking and Thinking on the Spot:** Organising thoughts using simple speaking structures to respond clearly during impromptu or unprepared situations.
- **Asking Questions Effectively:** Understanding how to form clear and appropriate questions and choose suitable question structures while speaking.
- **Reducing Fillers and MTI:** Becoming aware of methods to reduce filler words and MTI to improve clarity while speaking.
- **Body Language and Presence While Speaking:** Using posture, eye contact, tone, and awareness, to be taken seriously while speaking

## Professional Communication & Soft Skills

Apply spoken English skills to professional and workplace-like situations.

- **Storytelling for Everyday and Professional Situations:** Explaining processes, experiences, and projects in a structured and engaging way.
- **Expressing Opinions and Viewpoints:** Forming opinion-based sentences using reasons, examples, and comparisons in a clear and professional manner.
- **Having Professional Conversations:** Practising polite sentence patterns and appropriate language for workplace-style conversations.
- **Core Workplace Skills:** Understanding time management, teamwork, and basic workplace behaviour.

# Meet our Instructor Team



## **Aswath Rao V S**

**AI/ML Engineer, Ford Motors Company**

Aswath Rao is a detail-oriented Data Analyst and ML Engineer with a demonstrated history of developing advanced models and implementing efficient data pipelines.



## **Aswath Venkatesan**

**Foundar KNOT Acdemy, Ex Walmart**

Aswath is a tech entrepreneur with deep experience in building scalable e-commerce and retail platforms.



## **Abhinandan S P**

**Assistant Professor, IIT Palakkad**

Dr. Abhinandan S. P. is an Assistant Professor in the Mehta Family School of Data Science and Artificial Intelligence at the IIT Palakkad.

# Admission Process



## Clear Qualifier Test

Clear the qualifier test to be eligible for the program.



## Complete Counselling

Only shortlisted candidates go through the counselling process.



## Start Learning

Learn from India's top educators and stand out from the crowd.

# Fees Structure

Qualifier Test Fee (Non-Refundable)	₹49	
	Option 1	Option 2
	<b>Upfront</b>	<b>EMI</b> (Through our NBFC partners)
Secure Seat Fee (Non-Refundable)	₹2,499	₹2,499
Programme Fee (Non-Refundable)	₹23,500	₹8,303 x 3 months
<b>Total</b>	<b>₹25,999*</b>	<b>₹27,408*</b>

\*GST at 18% extra, as applicable

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