



Certification in Generative AI

About MAHE

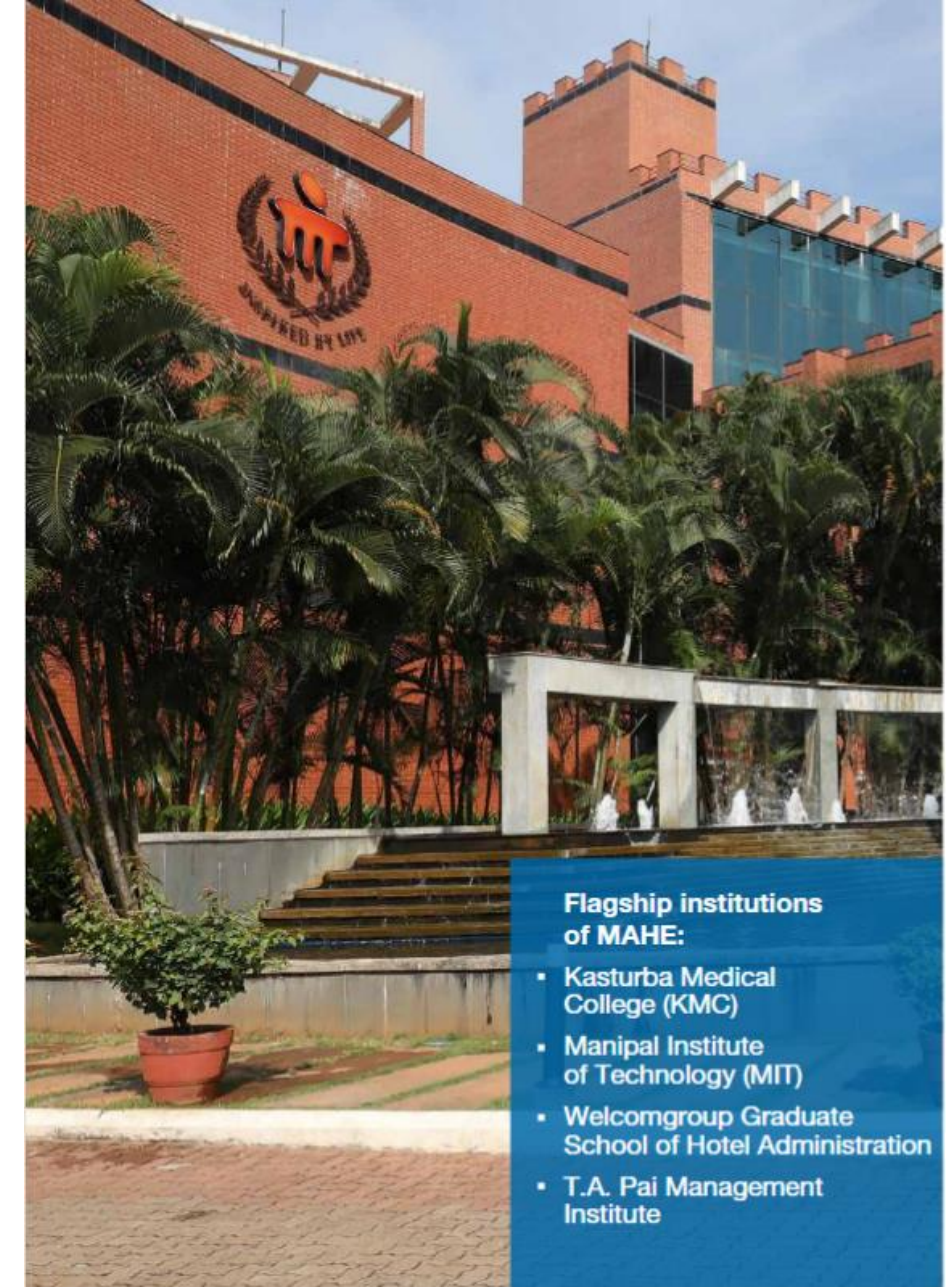
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About MAHE



Started in 1953 with Kasturba Medical College, **Manipal Academy of Higher Education (MAHE)** is one of India's leading academic and research institutions. It is a **globally engaged institution** with active partnership with more than **250 leading universities** around the globe.

It is **NAAC A++ accredited** and enjoys the status of 'Institution of Eminence' granted by the **Ministry of Education, Government of India**. It is amongst the handful of private institutions in India to have received this prestigious recognition, further accentuating its status as a world-class institution for higher education.



Flagship institutions of MAHE:

- Kasturba Medical College (KMC)
- Manipal Institute of Technology (MIT)
- Welcomgroup Graduate School of Hotel Administration
- T.A. Pai Management Institute

MAHE Rankings and Accreditations

 <p>INSTITUTION OF EMINENCE by Government of India</p>	 <p>7 2021 - University</p>	 <p>Asia 194 2022</p>	 <p>401-600 THE Impact Rankings - 2022</p>
 <p>351-400 THE Young University Rankings - 2022</p>	<p>Outlook</p> <p>2 2021 - ICARE (Top Deemed University)</p>		 <p>2 2022-23 – (Private University in India)</p>

MAHE - Industry Collaboration

18 Research
Centers

37 Institutes
to support
Industry
collaboration



Program Details

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Program Summary – WILP (Work Integrated Learning Program)



*ILT (Instructor led training sessions) will be scheduled for 6 hours in a week

Learner Journey

Learner Category

- ❖ Sales – 46 hours
 - Gen AI Primer
 - Selling Gen AI Solutions
- ❖ Pre Sales – 68 Hours
 - Gen AI Primer
 - Selling Gen AI Solutions
 - Gen AI Project Delivery
- ❖ Delivery – 50 Hours
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 - Gen AI Project Delivery



Learning Structure

- ❖ Lectures
- ❖ Interactive workshops and hands-on labs
- ❖ Case studies
- ❖ Graded Assignments
- ❖ Storytelling
- ❖ Roleplays
- ❖ Doubt clearing sessions
- ❖ Post read materials
- ❖ Immersion at MAHE or Client Campus



Learner Certification



**Certificate in Generative AI
provided by MAHE
(Manipal Academy of Higher
Education)**



MANIPAL
ACADEMY of HIGHER EDUCATION
(Institution of Eminence Deemed to be University)

Lectures will be scheduled during weekend for about 6 hours and during weekdays learners will be assigned tasks / activities

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Detailed Curriculum

Gen AI – Primer (1/2)

SI No	Module	Topic	Content
1	Gen-AI Foundations	AI Maturity, AI Canvas, AI Radar	<ul style="list-style-type: none">• Key technologies: Machine Learning, Natural Language Processing, Deep Learning• What is Generative AI?• Overview of AI models like LLMs, GPT, DALL-E, and their capabilities
2		Impact of Gen AI in Business	<ul style="list-style-type: none">• How AI is transforming various industries• Benefits of AI to businesses: Efficiency, scalability, personalization
3		Competitive advantage in Gen AI	<ul style="list-style-type: none">• Data and Domain expertise
4		Ethical considerations and compliance	<ul style="list-style-type: none">• Understanding AI ethics and compliance• Data privacy and security in the use of AI
5		Industry Challenges	<ul style="list-style-type: none">• Challenges of organizations to implement the unknown
6	Gen AI in Reality	Industry Case Studies	<ul style="list-style-type: none">• Industry Case Studies

Gen AI – Primer (2/2)

SI No	Module	Topic	Content
7	Tech Behind AI	Architecture	<ul style="list-style-type: none">• Different architectures for generative models (e.g., convolutional neural networks, transformers)• The role of attention mechanisms in generative AI
8		Prompt Engineering	<ul style="list-style-type: none">• Techniques for crafting effective prompts for generative models• How to use prompts to control the style and content of generated outputs
9		Vector Database	<ul style="list-style-type: none">• Different types of vector databases suitable for generative AI• How to store and query vectors efficiently• Techniques for indexing and searching vector databases
10		Agents	<ul style="list-style-type: none">• Different types of agents used in generative AI (e.g., reinforcement learning agents, imitation learning agents)• How to train agents to interact with generative models• Applications of generative AI agents in real-world tasks
11		Foundational Models	<ul style="list-style-type: none">• The role of foundational models in generative AI• Different approaches to training foundational models
12		Open Source	<ul style="list-style-type: none">• The importance of open source software in generative AI• Popular open source generative AI tools and libraries
13		Customizing Gen AI for specific needs	<ul style="list-style-type: none">• RAG model• LLM finetuning
14		Gen AI Ops	<ul style="list-style-type: none">• The challenges of managing generative AI models in production• Tools and techniques for monitoring and debugging generative models
15	Big Picture	Technology Forecasting	<ul style="list-style-type: none">• Emerging trends in generative AI• The potential impact of generative AI on society• How to prepare for the future of generative AI
16		Future proofing the Organization	<ul style="list-style-type: none">• How to use generative AI to gain a competitive advantage• Strategies for adopting generative AI within an organization
17		Societal Context	<ul style="list-style-type: none">• The ethical implications of generative AI• The potential for bias in generative AI models• How to mitigate the risks of generative AI
Total Duration -28 Hours (5 Weeks)			

Selling Gen AI Solutions

SI No	Module	Topic	Content
1	* Sample Gen AI Use-Cases across functions & Industries	Gen AI in BFSI	<ul style="list-style-type: none">• Risk assessment, fraud detection• Customer service automation, propensity to buy• AI in algorithmic trading and wealth management
2		Gen AI in Manufacturing	<ul style="list-style-type: none">• Predictive maintenance• Supply chain optimization• Quality control
3		Gen AI in Retail & e-commerce	<ul style="list-style-type: none">• Personalized shopping experiences• Inventory management• Demand forecasting
4	Storytelling in the context of Gen AI – Tech forecasting Enable customer conversations and co-create solutions		
5	Role Play for a Customer conversation on a Gen AI opportunity		
Total Duration -18 Hours (3 Weeks)			

*** Use Cases will be customized to include specific industry verticals**

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Gen AI – Project Delivery

SI No	Module	Topic	Content
1	Gen-AI Project Delivery	Documenting GenAI requirements	<ul style="list-style-type: none">• Considerations• Things to watch out for in GenAI context, capabilities
2		GenAI project sizing	<ul style="list-style-type: none">• Team structure• Skills required and typical team roles• How to do effort sizing?
3		GenAI frameworks and models	<ul style="list-style-type: none">• Huggingface• Replicate• LLMs – opensource and closed source
4		Optimizing the models	<ul style="list-style-type: none">• Performance• Reducing hallucinations
5		Fine Tuning the model	<ul style="list-style-type: none">• Prompt Engineering• RAG• Full fine tuning / PEFT
6		GenAI Model Deployment options	<ul style="list-style-type: none">• On-prem vs Cloud• Cloud deployment options (Azure, AWS)• Enterprise GenAI (OpenAI)
7		Hands-on Lab	<ul style="list-style-type: none">• Building a chat interface with Langchain, Pinecone and Huggingface
8	Mock Project – Designing a Gen AI Solution		
Total Duration - 22 Hours (4 Weeks)			

Trainer Profile

Trainer Profile – Raghu (1/2)



Raghu Cavale

Engineer, Salesman and Teacher

Qualification

Bachelor's Degree in Civil Engineering-1977-1982; NIT,
Vishakhapatnam

Master's Degree (MS)-1984(Indian Institute of Technology,
Madras

Adamas University - Doctor of Philosophy - PhD, Honoris
Causa Feb 2024

Experience Summary:

- 39+ years of experience in the technology space with vast knowledge across various domains and sectors. A hands on technologist and have learnt and implemented technology constantly.

Practical Experience:

- Have implemented AI in many large programs for the Government
- Worked with private sector in Logistics, Banking and Insurance
- Worked in Defence and Homeland Security

Academic Exposure

- Taught AI in medicine at Manipal University, IIT-KGP and Trivandrum Medical College
- Taught Smart-Grids which includes Big Data and AI for transmission systems and distribution systems. A special topic was Micro-Grids powered by AI
- Taught Computer Vision at Military College Mhow
- Delivered a full 36 hour course on Enterprise Data Architecture which includes architecting large AI systems and Hybrid systems
- Algorithmic trading which includes AI coupled with Time Series and Random walk
- Curated and got approvals to teach a 36 hour course on Logical AI which includes Knowledge Representation and Ontology
- Taught Generative AI as a full semester course
- Performance enhancement of large AI systems
 - Geo-Spatial maps
 - Logistics
 - Robots

Core Skill Sets:

- IT Strategy, AI, Generative AI, Program Management, Project Management, Business Development, Business Strategy, Consulting, SaaS,

Trainer Profile – Raghu (2/2)



Raghu Cavale

Engineer, Salesman and Teacher

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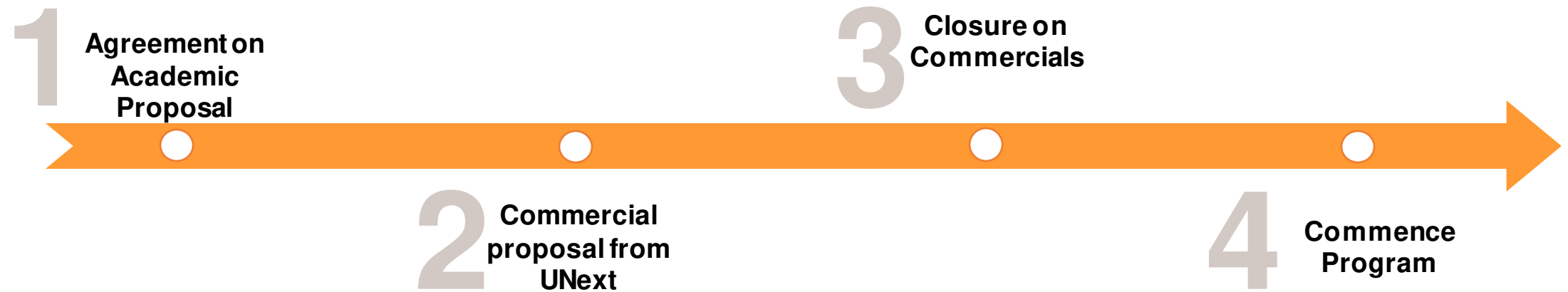
Work Experience :

- **Director: Manipal Academy for Higher Education (Jan 2022 – Till date)**
 - Adjunct Professor, Data Science, MIT
 - Head, MILES-Manipal Innovation Leadership and Entrepreneurship School
- **India Mentor; Falcon X Incubator (Feb 2022 – Till date)**
 - Falcon X is a Silicon Valley start-up incubator set up by very successful Entrepreneurs of Indian Origin
- **Industry Adviser-Digital-Global Environment Fund, South Asia (Feb 2022 – Till date)**
 - GEF is a sustainability fund. Work with them in the power sector
- **Founder-IndyGenie**
 - A Generative AI company
- **Senior Adviser-Infosys (Sep 2021 – March 2023)**
- **Senior Vice-President and Head of India Business – Infosys (1999 – Sep 2021)**
 - Built the India business from nothing to a 100million US\$+ with a healthy PBT
 - My role was that of a CEO for India (since2010) and I was responsible all functions-Sales, Delivery, HR, Finance etc. My KPI is Revenue, Profit before Tax, Customer Satisfaction and Employee Satisfaction.
 - Have a good business network both in the Public and Private Sector in India
 - Have bid, won and executed some of the largest and most visible digital projects in India including GST, Income-Tax, MCA, Payments bank etc.
 - Have created a lot of traction in the private sector and executed projects in the Machine Learning and digital space.
 - Have built a good team with minimal attrition among the direct reports

Other affiliations:

- Member Board of Governors of Manipal University Technology Incubation Board (A University VC fund)
- Member Board of Studies Manipal Institute of Technology
- Member Board of Governors of International Clinical Epidemiology Network(A health research organization) –Head the Finance Committee

Next Steps...





Thank You

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