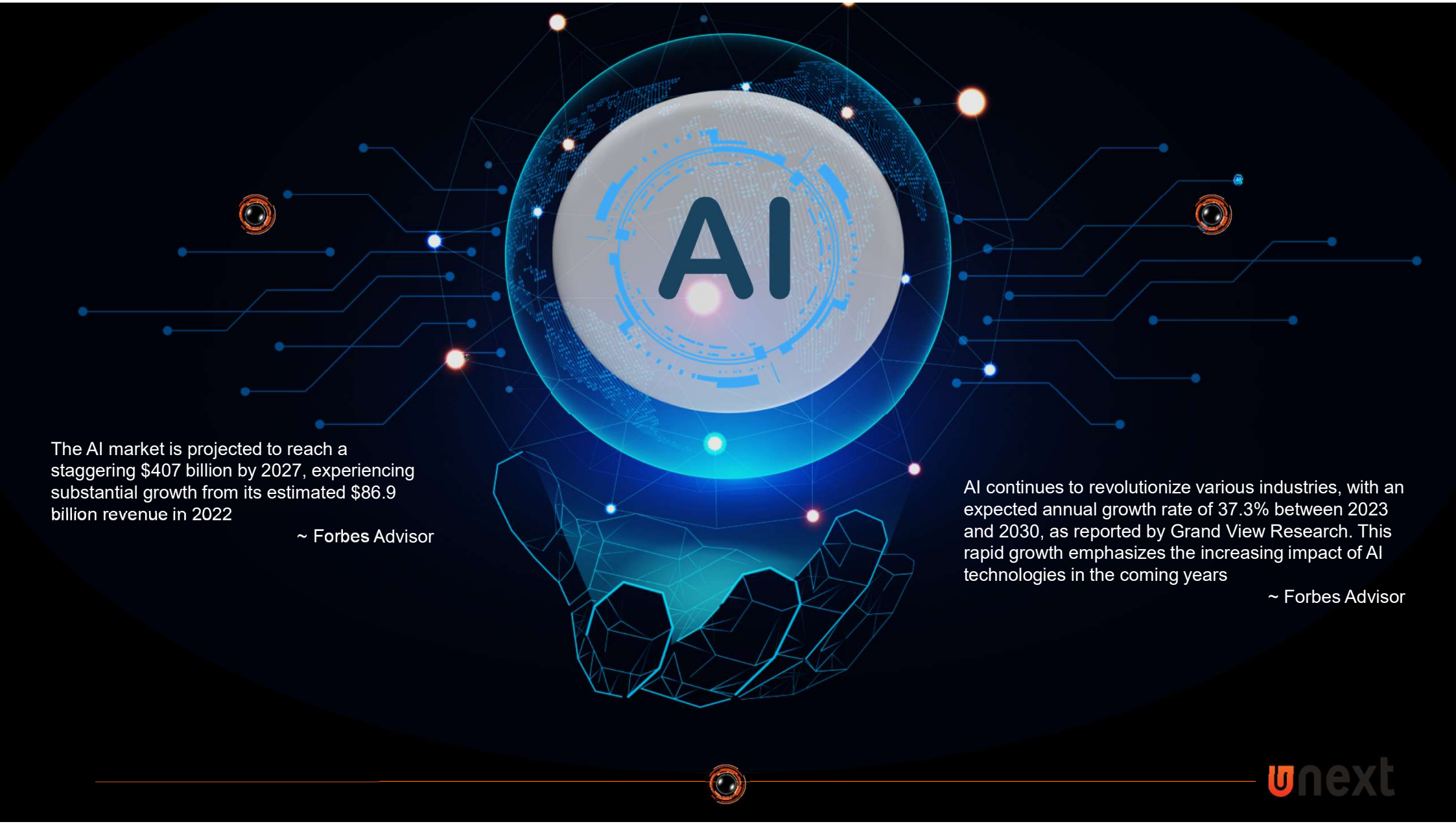

unext
Capability Deck – Generative AI



The AI market is projected to reach a staggering $407 billion by 2027, experiencing substantial growth from its estimated $86.9 billion revenue in 2022

~ Forbes Advisor

AI continues to revolutionize various industries, with an expected annual growth rate of 37.3% between 2023 and 2030, as reported by Grand View Research. This rapid growth emphasizes the increasing impact of AI technologies in the coming years

~ Forbes Advisor

GENERATIVE

As the field of Artificial Intelligence continues to evolve, Generative AI has emerged as a fascinating and rapidly growing area. It enables machines to create new content, such as images, text, and music, that closely resembles human-generated content.

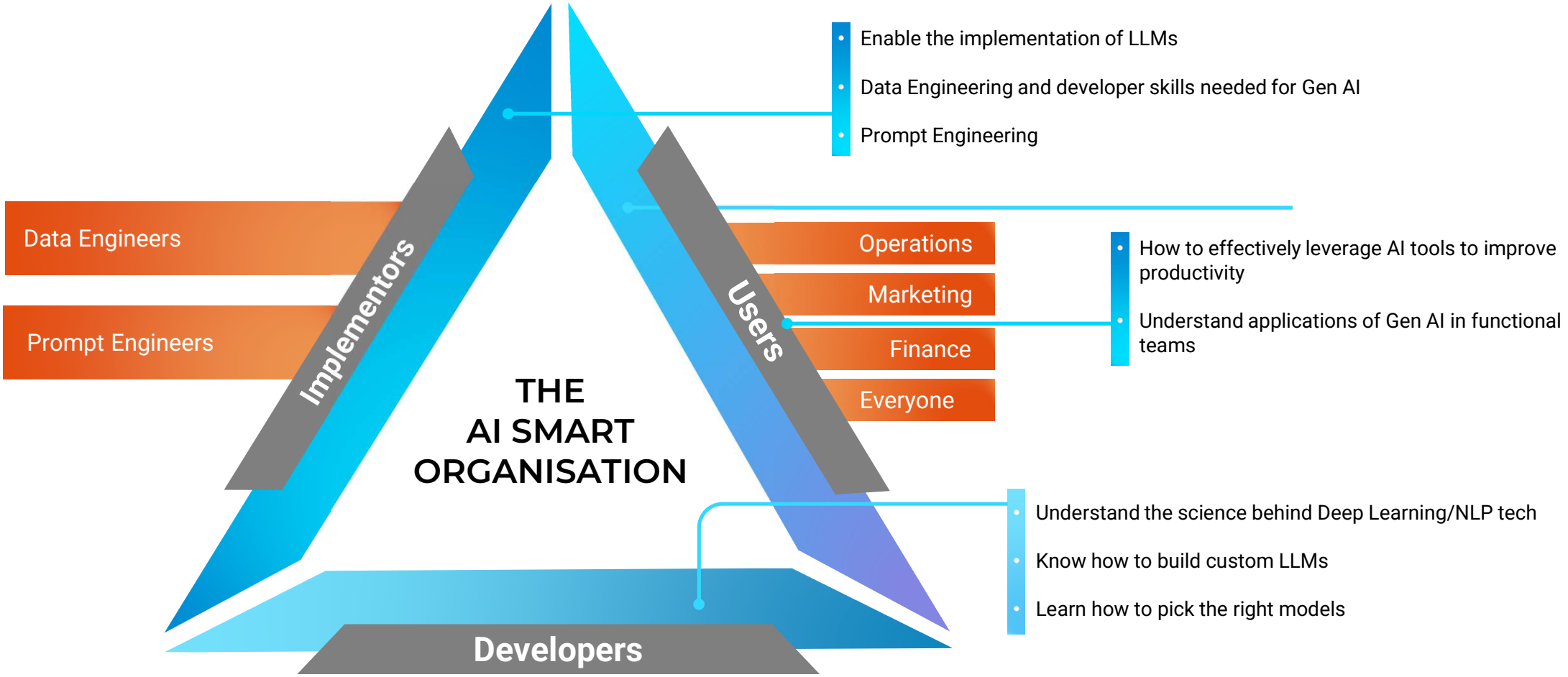
According to the Forbes Advisor survey, 73% of businesses use or plan to use AI-powered chatbots for instant messaging.

A significant number of businesses (53%) apply AI to improve production processes, while 51% adopt AI for process automation and 52% utilize it for search engine optimization tasks such as keyword research

“Welcome to the World of Generative AI”

Unext

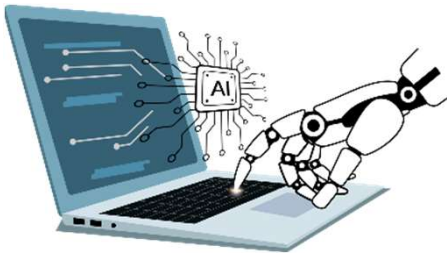
Building AI Capabilities – Multiple Audiences with Multiple Needs



Our Gen AI Training Journey so far…..

Total Participants Trained/to be trained → **6318**

370+ Hours ← **Total Duration Covered**



Target Audiences Across – Freshers→ Finance Team → Data Science Team → Engineers → Programmers

Self-paced e-learning content developed for diverse audience

unext

Building Gen AI Talent Pipeline (for one of the Big 4's)

1 **UNext provided candidates from their university alumni pool who had the required foundational knowledge.**

2 **Candidates were shortlisted through an Hackerank assessment**

3 **UNext conducted Delta Training (Gen AI) for the shortlisted candidates**

4 **Candidates deployed on client projects**

Gen AI - Clientele

unext

Sample Gen AI Programs (1/2)

Fundamentals of Gen AI (16 Hours)	Familiarize attendees with Gen AI concepts and potential applications, hands-on experience with select Gen AI tools. Demonstrate practical uses and case studies involving data analysis, automated document generation, task delegation etc. Share tips and strategies to integrate generative AI into their daily routine for improved performance.
Advance Gen AI (24 Hours)	Equip participants with a deep understanding of Generative AI, spanning foundational concepts, transformer architectures, and advanced techniques like instruction fine-tuning and RLHF. Gain practical skills in optimizing models, aligning them with human values, and leveraging reinforcement learning for effective refinement.
Gen AI for Spreadsheets & Excel (3 Hours)	To equip participants with the knowledge and skills to leverage Generative AI techniques within Microsoft Excel, enabling them to automate and enhance data analysis and report generation, and creative content creation processes.
Gen AI in Finance (4 Hours)	Familiarize attendees with Gen AI concepts and potential applications in Finance domain, enabling them to automate and enhance data analysis and report generation
Generative AI Training with Prompt Engineering (48 Hours)	1) Enable participants to master NLP and Neural Networks, covering text classification, pre-processing, and deep learning applications. Introduce Language Models, focusing on the Transformer architecture, GPT, and BERT, and explore Generative AI principles and applications. 2) Participants will gain practical insights into cutting-edge technologies, applications, and ethical considerations in these domains.
Gen AI Training (40 Hours)	The objective of the training was to enable participants to master NLP and Neural Networks, covering text classification, pre-processing, and deep learning applications. Introduce Language Models, focusing on the Transformer architecture, GPT, and BERT, and explore Generative AI principles and applications.

Sample Gen AI Programs (2/2)

Gen AI for Finance (8 Hours)	The objective of the training is to familiarize attendees with Gen AI concepts and potential applications in Finance domain, enabling them to automate and enhance data analysis and report generation. To equip participants with the knowledge and skills on Generative AI techniques. The Applications of Generative AI in Finance and Real-world examples of financial institutions using generative AI.
GitHub CoPilot and Amazon Code Whisperer(3 Hours)	The objective of the training is to familiarize attendees with Gen AI concepts and potential applications in Finance domain, enabling them to automate and enhance data analysis and report generation. To equip participants with the knowledge and skills on Generative AI techniques. The Applications of Generative AI in Finance and Real-world examples of financial institutions using generative AI.
Gen AI Training (8 Hours)	To equip the Participants/Authorized Users on an Introduction and overview with hands-on Generative AI and Hands-on simple use cases of prompt engineering. Overview, Evolution of Generative AI and Architecture, Prompt Engineering, Industry case studies, Hands-on.
Gen AI Content (8 Hours)	Company is planning to train laterals on GEN Ai awareness. They will conduct the training themselves and want us to develop the instructor led training guide which will comprise of: Overview, Evolution of Generative AI and Architecture, Prompt Engineering, Industry case studies, Hands-on . Screen guide, Facilitator guide, Lab Guide hours , Assessments – Multiple Choice Questions (MCQ) ,Assessments – Hands-on
Gen AI Content (30 Hours)	30 hrs of content being developed for three tracks. Each track being 10 hrs. The tracks are data science, prompt engineering and development & engineering

Gen AI for Business

Program Summary

Gen AI for Strategy

- Adaptive Strategic Planning with Generative Models
- Forecasting Market Trends using Generative AI
- Decision Support Systems with Generative Models
- Generative AI in Scenario Planning for Business Strategy
- Dynamic Resource Allocation through Generative Strategies

Gen AI for Customer Experience

- Personalized Customer Interactions using Generative AI Models
- Sentiment Analysis and Customer Feedback Generation
- Chatbot Enhancement with Generative Language Models
- Customer Journey Mapping with Generative AI
- Real-time Customer Support with Generative Conversational Agents

Gen AI for Software Development

- Code Generation and Auto-completion with Generative AI
- Bug Detection and Correction using Generative Models
- Automated Documentation Generation with Generative Text Models
- Enhancing Collaboration in Software Teams with Generative AI
- Continuous Integration Optimization through Generative Techniques

Gen AI for Enterprises

- Enterprise-level Data Synthesis using Generative Models
- Fraud Detection and Prevention with Generative AI
- Generative AI in Human Resources for Talent Management
- Cybersecurity Threat Prediction using Generative Techniques
- Streamlining Business Processes with Generative Automation

Gen AI Learner Category

User

- Introduction to Generative AI - Webinar
- Generative AI for All
- Generative AI for Finance Team
- Generative AI for Marketing Team
- Generative AI for Sales Team
- Generative AI for HR
- Generative AI program for L&D
- Generative AI for Spreadsheets
- Integrated Training Approach
- Generative AI in Manufacturing

Implementor

- Generative AI for Data Engineer

Developer

- AI Assisted Programming for Developers
- Generative AI for Data Science
- Customised Program for Developers

Click for Detailed Program Summary

unext

Program Summary

Back »

Si No	Category	Program Name	Duration in Hours	Target Audience
1	User	Introduction to Generative AI - Webinar	1.5	All
2		Generative AI for All	16	All
3		Generative AI for Finance Team	8	Finance Background
4		Generative AI for Marketing Team	24	Marketing
5		Generative AI for Sales Team	24	Sales Team
6		Generative AI for HR	8	HR's
7		Generative AI program for L&D	16	L&D team
8		Generative AI for Spreadsheets	3	All
9		Integrated Training Approach	--	All
10		Generative AI in Manufacturing	8	Audience in Manufacturing Industry
11	Implementor	Generative AI for Data Engineer	48	Audience with Data Science background
12	Developer	AI Assisted Programming for Developers	32	Developers/ Architects
13		Generative AI for Data Science	40	Audience with Data Science background
14		Customised Program for Developers	Multiple	Developers

Learner Category -User

1. Introduction to Generative AI - Webinar

Detailed Design - Introduction to Generative AI - Webinar

Back »

Topics	Sub-Topics	Duration
How do Machines Learn?	• Making sense of data and statistics • Machine Learning – supervised vs. unsupervised • Use cases	15 Minutes
Is it really (Artificial) Intelligence?	• A short history • Deep Learning	15 Minutes
What is GenAI?	• Demystifying terminology • Early Generative model • Current Language models • Use cases	20 Minutes
GenAI tools to enhance productivity	• Creating a program outline - ChatGPT • Creating a PPT – ToMe • Summarizing a syllabus - Fliki • Why Prompting is the Key to success?	30 Minutes
Q&A		10 Minutes
Total Duration – 90 Minutes		

2.Generative AI for All

Program Summary - Generative AI for All

Back »

Introduction to Gen AI and types of Generative Models (2h)

- Familiarize participants with Gen AI concepts, potential applications, and current trends

Prompt design (6h)

- Equip participants with the knowledge, skills, and practical expertise needed to create effective and bias-aware prompts for NLP tasks

Gen AI Tools (6h)

- Utilize ChatGPT and other day-to-day tools across various applications, including business communication, spreadsheets, and presentations

Responsible AI and ethical considerations in Gen AI (2h)

- Educate participants on the principles and practices of responsible AI, and data governance principles

Generative AI For All

16 Hours

unext

Detailed Design - Generative AI for All

Back »

Introduction to Gen AI and Types of Generative Models (2h)

- What is Gen AI?
- Evolution of Gen AI
- Applications of Gen AI
- Understand Different Gen AI models:
  - Text to Text: ChatGPT, GPT-4, Google Bard
  - Text to Image: Dalle 2, Stable Diffusion, Mid journey
  - Text to Video: Gen 2, Dream fusion
  - Text to Audio: Riffusion, MusicLM

Prompt design (6h)

- Introduction - what it is, the importance of well-designed prompts, applications and use cases of prompt design
- Clarity and specificity in prompts
- Bias mitigation in prompt designing
- Fine-tuning and pre-training prompts
- Prompt formatting and styling
- Evaluating prompt performance
- Pitfalls and challenges in prompt design
- Advanced tips and tricks
- Case studies and practical applications

Gen AI Tools (6h)

- ChatGPT - what is ChatGPT, ChatGPT interface and features, practical tips for generating high-quality content quickly, alternate free tools (e.g., Hugging Chat), use cases of ChatGPT, demonstration and hands-on practice of ChatGPT's abilities
- Business communication – (e.g., tools: LetterBot , ChatGPT for Gmail, ChatGPT Writer)
- Spreadsheets – (e.g., tools: ChatGPT , Excel Macros, ArcwiseAI, SheetGPT
- Presentations – (e.g., tools: ChatGPT, PowerPoint, Tome)

Responsible AI and ethical considerations in Gen AI (2h)

- Privacy by design
- Ethical ways of data collection
- Privacy-preserving techniques
- Differential privacy –in data, in algorithms
- Synthetic data
- Data Governance

3.Generative AI for Finance Team

Generative AI – Finance Team

Sl No	Module	Topics	Learning Outcome	Duration In Hours
1	Foundation	➢ Introduction to Machine Learning ➢ Introduction to Deep Learning ➢ Introduction to NLP	• Gain a foundational understanding of key concepts in machine learning, including the principles of deep learning and an introduction to natural language processing (NLP), enabling them to gain the knowledge of the fundamental components and applications of these technologies	1
2	Fundamentals of Generative AI	➢ Introduction to Language Model ➢ Introduction to Generative AI ➢ Prompt Engineering & Hands On • Elements of a prompt • Designing effective prompts. • Creating prompts for Finance use cases	• Be able to demonstrate proficiency in creating and utilizing language models, understand the fundamentals of Generative AI, apply prompt engineering techniques, and successfully engage in a hands-on exercise to generate AI-driven content.	3
3	Business use cases for Generative AI	➢ Claims Processing Automation • Document Analysis • Image Recognition ➢ Fraud Detection and Prevention • Anomaly Detection • Supervised Learning • Behavioural Analysis ➢ Customer Service Support • AI driven Chatbots • Intent Recognition ➢ Personalized Insurance Recommendations • Content-based filtering • Recommendation engines. ➢ Predictive Analytics for Portfolio Management • Time Series Analysis • Monte Carlo Simulation ➢ Generative AI Tools for Finance	• Acquire a comprehensive understanding of leveraging AI in finance. Develop proficiency in utilizing advanced techniques like document analysis, anomaly detection, behavioural analysis, intent recognition, time series analysis, Monte Carlo simulation, and generative AI tools. • Be equipped with the knowledge and skills to harness AI for informed decision-making, risk mitigation, and enhanced customer interactions in the dynamic landscape of financial services.	3.5
4	Introduction to Ethics and Responsibilities in GenAI	➢ Ethical challenges, biases, and the responsible use of GenAI ➢ Legal considerations and compliance requirements when implementing GenAI	• Be proficient in identifying and addressing ethical challenges and biases in the application of Generative AI.	0.5
Total Duration – 08 Hours				

4.Generative AI for Marketing Team

Generative AI – Marketing Team (1/2)

Back »

SL No	Module	Topic	Sub Topics	Learning Outcomes	Duration
1	Introduction to Generative AI in Marketing	AI in Marketing	• Understanding the Role of AI in Marketing • The Power of Automation in Marketing	• Understand the role of AI in marketing and marketing automation. • Grasp the concept of Generative AI and its significance for marketers. • Explore recent Generative AI architectures like Stable Diffusion and Transformers. • Familiarize yourself with chatbots and prompt engineering techniques.	4 Hours
		What is Generative AI and Its Relevance in Marketing	• Unraveling the World of Generative AI • Why Marketers Should Pay Attention		
		Recent Generative Architectures	• Exploring Stable Diffusion and Transformers • Evolution of Generative AI Models		
		Chatbots and Prompt Engineering	• A Closer Look at ChatGPT, Claude, Bard, and More • Harnessing the Potential of Prompt Engineering		
2	Generative AI in Content Creation	Introduction	• The Role of Generative AI in Content Creation	• Discover the impact of Generative AI on content creation. • Learn to generate AI-driven text, visuals, and audio for various marketing purposes. • Gain proficiency in creating stunning product images	4 Hours
		AI-Generated Content Types	• Creating AI-Generated Text: Blogs, Articles, and Social Media Posts • Crafting AI-Generated Visuals: Images, Videos, and Graphics • Producing AI-Generated Audio: Voiceovers, Music, and Podcasts		
3	The Future of Search, SEO, and Digital Marketing	ChatGPT Plugins and the Future of Search	• Rethinking Search with ChatGPT Plugins • Redefining Digital Marketing with AI	• Understand the evolving landscape of search and SEO in the context of Generative AI. • Explore the potential of ChatGPT plugins in search.	4 Hours

Generative AI – Marketing Team (2/2)

Back »

SL No	Module	Topic	Sub Topics	Learning Outcomes	Duration
4	Generative AI for Personalization	Creating and Targeting Buyer Personas	• Crafting Buyer Personas with Generative AI • The Art of Targeting	• Learn to create and target buyer personas using Generative AI. • Implement AI-driven personalization strategies in marketing campaigns. • Discover how to leverage AI for data-driven experimentation in marketing	4 Hours
		Implementing AI-Driven Personalization	• Putting AI-Personalization into Action • Delivering Tailored Experiences		
		Leveraging AI for Data-Driven Experimentation	• Experimentation Strategies Powered by AI		
5	Analyzing and Optimizing Campaigns with AI	Measuring Attribution in a Post-ATT World	• Navigating Attribution Challenges • AI in Measuring Marketing Success	• Master techniques for measuring attribution in a post-ATT (App Tracking Transparency) world. • Explore the use of Generative AI in marketing analytics.	4 Hours
		Generative AI for Marketing Analytics	• Revolutionizing Marketing Analytics with AI		
6	Current Landscape of Generative AI in Marketing	Real-World Examples of Generative AI in Marketing	• Showcasing Real Marketing Success Stories • Inspiring Applications of Generative AI	• Discover real-world examples of Generative AI in marketing and gain inspiration for your own projects. • Familiarize yourself with Generative AI tools and their applications in marketing. • Learn the importance of ethical and responsible usage of AI in marketing.	4 Hours
		Generative AI Tools for Marketers	• A Toolbox for Marketers: Generative AI Tools like : ➢ ChatGPT ➢ Dalle ➢ Tome ➢ Midjourney etc…		
		Ethical and Responsible AI Usage	➢ Ensuring Ethical and Responsible Use of Generative AI		
Total Duration – 24 Hours					

5.Generative AI for Sales

Generative AI – Sales (1/2)

Back »

SL No	Module	Topic	Sub Topics	Learning Outcomes	Duration
1	Introduction to Generative AI in Sales	AI in Sales	• Understanding the Role of AI in Sales • The Power of Automation in Sales	• Understand the role of AI in sales and sales automation. • Grasp the concept of Generative AI and its significance for the sales team • Explore recent Generative AI architectures like Stable Diffusion and Transformers. • Familiarize yourself with chatbots and prompt engineering techniques.	4 Hours
		What is Generative AI and Its Relevance in Sales	• Unraveling the World of Generative AI • Benefits of GenAI in Sales		
		Recent Generative Architectures	• Exploring Stable Diffusion and Transformers • Evolution of Generative AI Models		
		Chatbots and Prompt Engineering	• A Closer Look at ChatGPT, Claude, Bard, and More • Harnessing the Potential of Prompt Engineering		
2	Sales Forecasting with AI	Predicting future sales and revenue using AI models	• The Role of Generative AI in Sales Forecasting • Methods for Sales forecasting • Forecasting tools	• Discover the benefits of Generative AI in sales forecasting • Learn choose appropriate sales forecasting methods • Develop the ability to generate precise sales forecasts using selected methods	4 Hours
3	Customer Relationship Management (CRM)	Leveraging AI for improved CRM and customer insights	• Personalization of Customer Experience • Customer Data Analysis and Segmentation	• Gain deeper understanding of customer behaviour and preferences • Learn to use AI-powered CRM to enhance customer engagement	4 Hours

Generative AI – Sales (2/2)

Back »

SL No	Module	Topic	Sub Topics	Learning Outcomes	Duration
4	Generative AI for Personalization	Personalized Sales Recommendations	• Crafting Buyer Personas with Generative AI • Leveraging AI to tailor recommendations • Enhance Customer Engagement	• Learn to strategically craft buyer personas using GenerativeAI • Provide highly personalized sales recommendations • Learn to develop and implement AI-driven engagement strategies	4 Hours
5	Building a GenAI Sales Strategy	Developing a GenAI sales strategy tailored to your organization	• Developing a GenAI roadmap for sales • Integration and change management • Revolutionizing Sales Analytics with AI	• Learn to develop a strategic roadmap for integrating GenerativeAI into sales operations • Learn strategies for seamless integration of GenAI into existing sales processes • Learn to make data-driven decisions by applying AI to sales analytics	4 Hours
6	Current Landscape of Generative AI in Sales	Real-World Examples of Generative AI in Sales	• Showcasing Real Sales Success Stories • Inspiring Applications of Generative AI	• Discover real-world examples of Generative AI in sales and gain inspiration for your own projects. • Familiarize yourself with Generative AI tools and their applications in sales • Learn the importance of ethical and responsible usage of AI in sales	4 Hours
		Generative AI Tools for Sales	• Generative AI Tools like : ➢ ChatGPT ➢ Breakcold ➢ FinalScout ➢ ObviouslyAI etc…		
		Ethical and Responsible AI Usage	➢ Ensuring Ethical and Responsible Use of Generative AI		
Total Duration – 24 Hours					

6.Generative AI for HR

Generative AI – HR

Back »

Sl No	Module	Topics	Learning Outcome	Duration In Hours
1	Foundation	➢ Introduction to Machine Learning ➢ Introduction to Deep Learning ➢ Introduction to NLP	• Gain a foundational understanding of key concepts in machine learning, including the principles of deep learning and an introduction to natural language processing (NLP), enabling them to gain the knowledge of the fundamental components and applications of these technologies	1
2	Generative AI	➢ Introduction to Language Model ➢ Introduction to Generative AI ➢ Prompt Engineering & Hands On • Elements of a prompt • Designing effective prompts. • Creating prompts for HR use cases	• Be able to demonstrate proficiency in creating and utilizing language models, understand the fundamentals of Generative AI, apply prompt engineering techniques, and successfully engage in a hands-on exercise to generate AI-driven content.	2
3	Business use cases for Generative AI	➢ Recruitment and Talent Acquisition • AI-driven Candidate Screening • Chatbot-Assisted Recruitment ➢ Employee Onboarding • Personalized Onboarding Experience ➢ Workforce Planning • Predictive Analytics for Workforce Trends ➢ HR Analytics • Predictive HR Analytics ➢ Employee Well-being • Wellness Programs • Chatbots for Mental Health Support	• Be able to strategize, deploy, and optimize AI-driven solutions in HR processes, specifically focusing on enhancing Recruitment and Talent Acquisition, Employee Onboarding, Workforce Planning, Predictive Analytics, Employee Well-being, and utilizing Chatbots for mental health support.	3.5
4	Generative AI Tools for HR	➢ ChatGPT ➢ Juicebox AI (PeopleGPT) ➢ Attract.ai ➢ Tome ➢ EffyAI etc	• Develop proficiency in utilizing generative AI tools for HR applications, enabling enhanced talent acquisition, workforce optimization, and innovative HR strategies.	1
5	Introduction to Ethics and Responsibilities in GenAI	➢ Ethical challenges, biases, and the responsible use of GenAI ➢ Legal considerations and compliance requirements when implementing GenAI	• Be proficient in identifying and addressing ethical challenges and biases in the application of Generative AI.	0.5
Total Duration – 08 Hours				

7.Generative AI Program for L&D

Program Outcome

Back »

- Introduction to AI, ML and Gen-AI
- AI Tools that can be leveraged in order to:
  - **Improve Content Creation, Production & Summarization**.
    - Automated presentation creation tool with Gen-AI
      - Create presentations 10X faster than google slides / PowerPoint.
      - Create templates (with layouts, pertinent text, images and icons) from a text prompt.
    - Augmenting SME capability for custom learning solutions
      - Using AI tools to summarize text-based content, offer images and add voice overs before turning it into a video.
  - **Foster adaptive learning and achieve higher personalization of learning content.**
    - Democratize learning by utilizing AI, making it available and customized for employees from different backgrounds.
  - **Enhance Assessment and Evaluation**
  - **Accomplish sustainability**
    - Keeping the learning assets relevant and up to date
- Introduction to Prompting for better outcomes with Gen-AI tools
- Best Practices, Limitations & Risks

Detailed Design Generative AI (1/2)

Back »

Topic	Sub-topic	Description	Hours
Day 1: Introduction to AI-ML and GenAI tools for L&D			
Introduction	Introduction to AI	The evolution of AI and its various technologies The impact of AI in various domains as well as in our day-to-day activities Types of AI – narrow, general and super	3
	Introduction to ML	What is Machine Learning? Types of Machine Learning Use Cases for Machine Learning Machine Learning v/s Statistical models How ML models drive data-driven decision making	
	Generative AI	What is Generative AI? How does a Generative AI tool work? Generative AI v/s AI Use cases for Generative AI by Industry Benefits and Limitations Popular concerns surrounding GenAI tools Popular Generative AI tools in the market at present. Best practices for using Generative AI The future of Generative AI	
Tools	ChatGPT	An AI-enabled platform called ChatGPT uses natural language processing (NLP) to have conversations with users. It is a versatile tool that can understand and respond to both spoken and written language, making it helpful for a wide range of applications**. ChatGPT has the potential to improve curation and content production, foster truly adaptive learning, and contribute to higher personalization of learning content in L&D. Organisations may democratise learning by utilising AI, making it available and customised for employees from a variety of backgrounds.**	1
	DALL-E	Dall-E generates original and imaginative graphics from textual descriptions using a neural network. Dall-E, a creation of OpenAI, can produce any form of images. People have been astounded by the tool's capacity to think creatively and produce visuals that are nearly indistinguishable from actual photographs. **DALLE is extremely useful in L&D for creating images for content, for social media as well as for creating materials for any internal campaigns that are being run.**	1
	Fliki (NVIDIA)	**Fliki uses artificial intelligence to summarise text-based content, offer images, and add voiceovers before turning it into a video.** Fliki's clever feature is that it summarises your information, which helps you save time and work. Fliki contains thousands of free stock images and videos, over 1000 voices in 75 different languages, all to help create stunning content.	1
	Beautiful.ai - DesignerBot	Create stunning presentations 10 times faster than with Google Slides or PowerPoint. Elements are automatically aligned, and given a presentation topic, suggested templates can even be generated. An automated presentation creation tool with generative AI, DesignerBot creates complete templates from a text prompt, complete with layout, pertinent text, images, and icons that can all be edited by the user and exported to PowerPoint.	1
	Copy.ai	A multilingual AI email-writing tool, Copy.AI creates text variations for various email formats and a variety of target markets. Utilize Copy.AI in addition to your standard apps like Google Docs, Gmail, and others because it includes a Chrome plugin. The usage can extend from running campaigns within specific cohorts, making it easier to address a bulk of the population.	1

Detailed Design Generative AI (2/2)

Back »

Topic	Sub-topic	Description	Hours
Day 2: Introduction to Prompting for Better Outcomes with GenAI tools			
Prompt Engineering for GPT-3 and Other Tools	Introduction to Prompt Engineering	What is Prompt Engineering and why is it important?	1
		History and evolution of Prompt Engineering	
		Applications of Prompt Engineering for L&D Teams	1
		Role of Prompts in guiding Language Models	
	Effective Prompt Design	Characteristics of effective prompts	1
		Best practices for prompt design	
		Examples of successful prompts and their impact	1
	Generating Effective Prompts	Techniques for generating effective prompts	2
		Strategies for improving prompt quality and relevance	
		The role of human feedback in prompt generation	
	Analysing GPT-3.5 Output	Techniques for analysing GPT-3.5 output	2
		Common issues and errors in GPT-3.5 output	
		Strategies for improving GPT-3.5 output quality	
Total Duration - 16 Hours			

8.Generative AI for Spreadsheets

Detailed Design - Generative AI for Spreadsheets – 3 Hours

Back »

Topic	Sub-Topics	Delivery type	Learner Experience	Duration	Dependency
Introduction	Generative AI Technologies Benefits & Limitations Best Practices Ethical Considerations	Instructor led	Conceptual discussion	15mins	
Getting started with Prompting	Getting started with Chat GPT Use Prompts to get recommendations for Excel Formulas	Instructor led	Hands-on practice	15mins	
Designing Prompts for custom requirements	Case study Use Prompts to get recommendations for Excel Formulas - Logical functions - Lookup functions - Aggregate functions	Instructor led	Hands-on practice	60mins	
Leveraging on Excel Gen AI Add-Ins	Excel Gen AI Add-Ins - Data Analysis - AI recommendations	Instructor led	Hands-on practice	30mins	Add-ins need to be approved by the internal IT Team
Designing Prompts for getting recommendations on Excel Macros	Use Prompts to get recommendations for Excel Macros - Macros to automate simple tasks - Macros to automate medium to complex tasks	Instructor led	Hands-on practice	30mins	
Knowledge check	Quiz Discussion	Participant led	Survey	15mins	
Summary	Retrospective Q&A	Participant led	Discussion	15mins	

9. Integrated Training Approach

Integrated Training Approach

Back »

- Learners are presented with a specific dataset, and they learn how to prompt these AI tools strategically in order to solve the business problem

- Learners will formulate queries that yield not only insightful analyses but also code snippets to address end-to-end analytics challenges

- Strong emphasis on the art of effective prompting and using the right tools to solve parts of the problem

Integrated Training Process

Integrated Training Process

Back »

The following Gen AI tools will be used to assist in solving the business problem:

- **ChatGPT** – for strategizing and code snippets
- **ArcwiseAI** – for Data exploration and preparation
- **AWS Code Whisperer** – for code generation
- **Tome** – for ppt generation

Integrated Session Delivery Approach

Integrated Session Delivery Approach - Example

Back »

Taking the **Marketing domain as an example**, here's how the candidates will leverage various tools to solve different aspects of the problem:

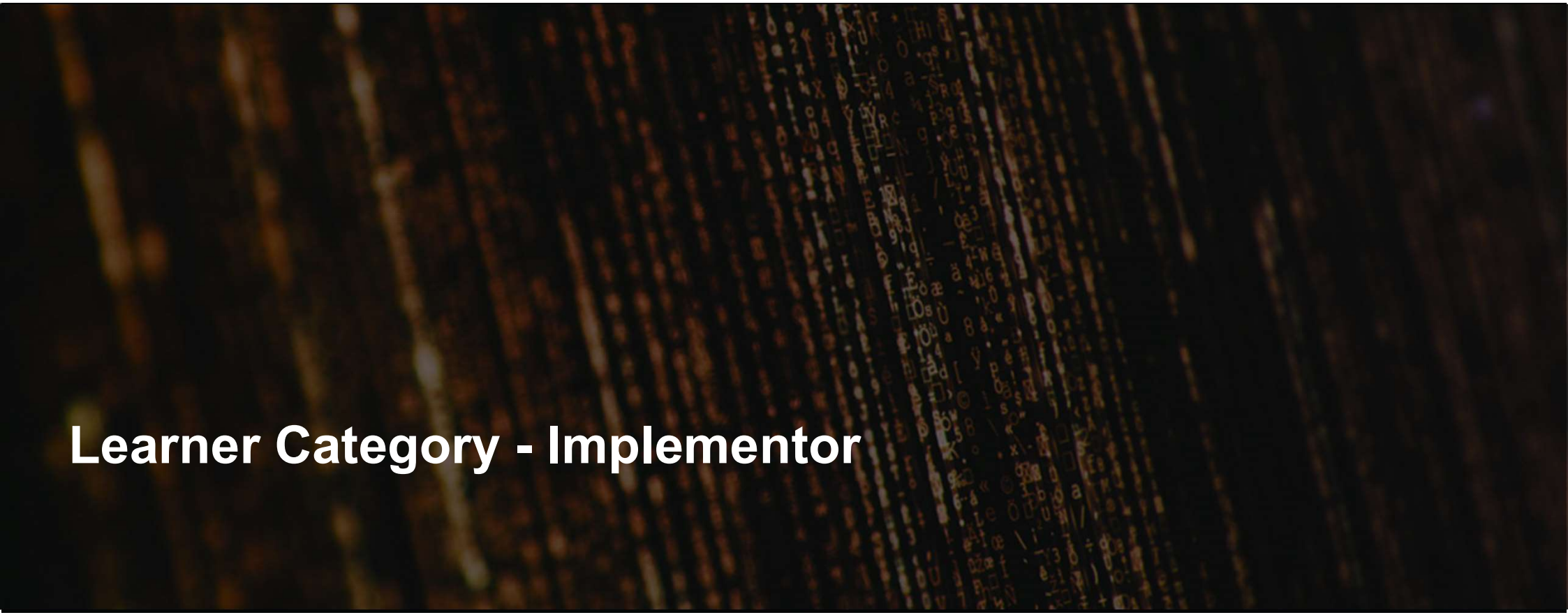
- **Problem Introduction:** Presentation of the marketing business problem to the candidates. This could be related to market analysis, campaign optimization, or customer segmentation
- **Strategy Design:** Candidates will use the help of ChatGPT to gather strategic advice.
- **Data Analysis:** Candidates will be taken through the elaborate process of data cleaning.
- **Deck Creation:** After the initial data analysis, candidates will learn how to use tools like TOME or Fliki to automatically create presentation decks.
- **Content Creation:** Content creation, such as generating ad copy, blog posts, or social media content, can be obtained with the use of tools like Midjourney, DALL-E, etc.
- **Data-Driven Decision Making:** Emphasize the importance of making data-driven decisions by combining insights from ChatGPT, visualizations from TOME/Fliki, and content generated by Midjourney.
- **Feedback and Iteration:** Candidates will sift through different marketing strategies using the materials generated with the help of the AI tools. Discussion followed on how best to refine strategies and content.

10.Generative AI in Manufacturing

Detailed Design

Back »

Sl No	Module	Topics	Learning Outcome	Duration In Hours
1	Foundation	➢ Introduction to Machine Learning ➢ Introduction to Deep Learning ➢ Introduction to NLP	• Gain a foundational understanding of key concepts in machine learning, including the principles of deep learning and an introduction to natural language processing (NLP), enabling them to gain the knowledge of the fundamental components and applications of these technologies	1
2	Fundamentals of Generative AI	➢ Introduction to Language Model ➢ Introduction to Generative AI ➢ Prompt Engineering & Hands On • Elements of a prompt • Designing effective prompts. • Creating prompts for Manufacturing use cases	• Be able to demonstrate proficiency in creating and utilizing language models, understand the fundamentals of Generative AI, apply prompt engineering techniques, and successfully engage in a hands-on exercise to generate AI-driven content.	3
3	Business use cases for Generative AI	➢ Predictive Maintenance • Text Summarization • Image Classification ➢ Quality Control • Object Identification • Anomaly Detection ➢ Supply Chain Optimization • Time Series Analysis • Principal Component Analysis ➢ Energy Management • Recommendation techniques • Semantic Segmentation ➢ Safety and Human Wellbeing • Voice-to-Text recognition • Object Identification	• Be able to identify, evaluate, and propose solutions leveraging Generative AI techniques for specific applications such as Predictive Maintenance, Image Classification, Anomaly Detection, and Supply Chain Optimization.	3.5
4	Introduction to Ethics and Responsibilities in GenAI	➢ Ethical challenges, biases, and the responsible use of GenAI ➢ Legal considerations and compliance requirements when implementing GenAI	• Be proficient in identifying and addressing ethical challenges and biases in the application of Generative AI.	0.5
Total Duration – 08 Hours				



Learner Category - Implementor

1. Generative AI for Data Engineers

Learning Path

Back »

Background	Modules	
Data Engineer	Foundation Program 24 Hours	Gen AI for Data Engineers 24 Hours

Learning Outcome	Business Outcome
Fine Tune, Deploy and Manage Gen AI models	**Data Engineers able to deploy fine tuned LLM models**

unext

Foundation Program

Back »

- Introduction to Statistics, Probability and EDA – 4 Hours
- Introduction to OpenAI, Azure ML/Python – 4 Hours
- Introduction to Machine Learning – 4 Hours
- Deep Learning – 4 Hours
- Introduction to NLP – 8 Hours

Total Duration – 24 Hours

Detailed Design (1/2)

Day	Module	Topics	Remarks	Learning Outcomes	Mode	Duration in Hours
1	Introduction to Statistics, Probability and EDA	• Introduction to inferential statistics, probability distributions binomial, Poisson, normal • Hypothesis Testing: Central Limit Theorem • Z-test, t-test,ChiSquare test, ANNOVA, Hypothesis testing and sampling theory, Central Limit Theorem, Concept of p-value • Feature Engineering - handling missing values, imputing, dealing with outliers, binning continuous variables, Data Encoding Techniques	Theory	• Understand inferential statistics, including probability distributions and hypothesis testing. Proficiency in tests like Z-test, t-test, ChiSquare, and ANOVA, along with a solid grasp of Central Limit Theorem and p-value, will be achieved.	Instructor led	4
	Introduction to OpenAI, Azure ML	• OpenAI LLM Models • Parameters (Temperature, top_p etc.) • Introduction to Azure ML and Azure OpenAI • Creating pipeline in Azure ML • Hyper parameter tuning • Accessing API using Python • Deploying the models on Azure • Capabilities provided features and limitations	Hands-On using Azure ML and Open AI access	• Understand OpenAI LLM models, exploring parameters like temperature and top_p. Gain practical skills in creating pipelines, hyperparameter tuning, accessing APIs using Python, and deploying models on Azure.		4
2	Introduction to Machine Learning	• Introduction to Machine Learning: Supervised and Unsupervised Learning, • Linear Regression: Linear Regression: Predicting continuous variable, assumptions of Linear Model, constructing a regression model, Model evaluation using loss functions, RMSE, R-Square • Applications discussed with case studies • Logistic Regression: Logistic Regression: Predicting a binary variable, interpreting model output, to create a logistic model • Checking model diagnostics, computing accuracy metrics, ROC, AUC, doing kfold cross validation • Applications discussed with case studies • Clustering: • Introduction to Clustering, • K-means, Hierarchical Clustering, Gaussian Mixture Models , • Practical Issues in clustering	Theory and Demo using Azure ML	• Understand machine learning basics: supervised and unsupervised learning. Explore linear regression for continuous variables, logistic regression for binary prediction, and model evaluation metrics. Explore clustering with K-means, hierarchical clustering, and Gaussian Mixture Models, addressing practical issues. Real-world application is discussed and demonstrated through a case study.		4

Detailed Design (2/2)

Day	Module	Topics	Remarks	Learning Outcomes	Mode	Duration in Hours
2	Deep Learning	• Overview of Artificial Intelligence,Introduction to Neural Networks • Understanding Gradient Descent, Loss Functions and Learning Rate • Batch Gradient, Mini-batch Gradient and Stochastic Gradient, optimizers like Adagrad, RMSProp, Adam optimizer etc. • Concepts of FFNN and Backpropagation algorithms.	Theory	• Gain knowledge on Artificial Intelligence fundamental concepts such as Gradient Descent, Loss Functions, and Learning Rate. Understand different gradient descent variants concepts of Feedforward Neural Networks (FFNN) and Backpropagation algorithms	Instructor led	4
		• Understanding Regression using Deep learning. • Exploring the impact of learning rate on model. • Running the model for multiple epochs • Hyperparameter optimization • Understanding Classification using deep learning • Concepts of Categorical Cross Entropy , Sigmoid, Softmax function • Importance of Categorical Cross Entropy Loss in model evaluation	Demo using Azure ML	• Learn how Regression and Classification can be done using Neural Networks through explanations and demo.		
3	Introduction to NLP	• Tokenization, n-grams, Bag of words, tfidf • Stemming, lemmatization, POS and NER Tagging • Word Embeddings - word to vec, Skipgram, CBOW, Glove, fasttext	Theory	• Understand essential natural language processing (NLP) techniques, including tokenization, n-grams, Bag of Words, and tf-idf. Learn Text processing methods such as stemming, lemmatization, POS/NER tagging are explored. Gain insights into workings of word embeddings (word2vec, Skipgram, CBOW, Glove, fasttext) and provides an understanding of RNN and LSTM architectures.		2
		• Understanding RNN,LSTM architecture • Advantages and disadvantages of RNN and LSTM • Case study using LSTM				2
		• Implementing BERT usecases • Using BERT for text classification • BERT Question Answering system	Hands On	• Understand BERT architecture and its application for text classification.		4
Total Duration - 24 Hours						

Gen AI for Data Engineers

Back »

- Introduction to Generative AI – 1 Hour
- Prompt Engineering – 1 Hour
- Introduction to Language Model and Diffusion Model Architectures – 4 Hours
- Building LLM Apps and deployment -10 Hours
- LLM fine tuning and deployment – 8 Hours

Total Duration – 24 Hours

Detailed Design (1/3)

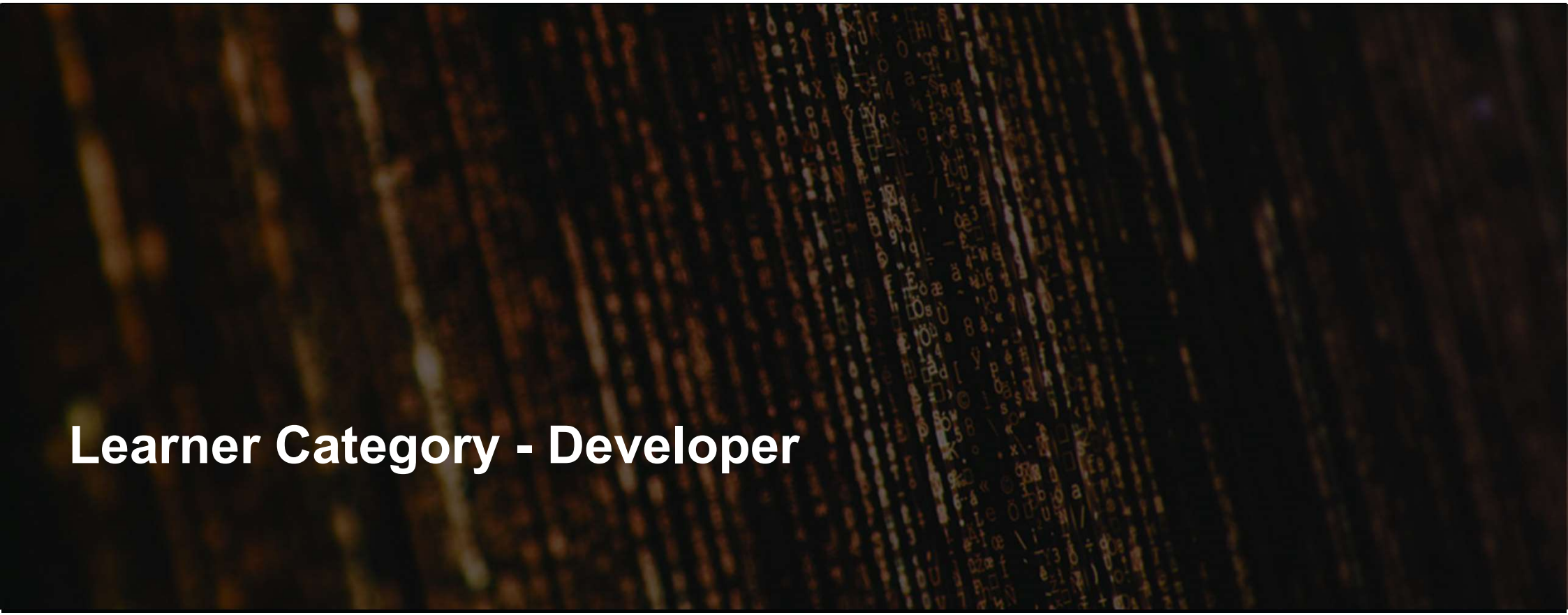
Day	Module	Topics	Remarks	Learning Outcomes	Mode	Duration in Hours
1	Introduction to Generative AI	• Generative AI Overview • How GenAI is different from other AI ? • How GenAI models are created and how they work. • Modalities - text, image, audio, video, and code • Zero-shot, Single shot, Few shot • "Potential applications and current trends: Use cases across industries like CPG, E-commerce, Healthcare, Supply Chain, Financial Services" • Major tech players - Google, Meta, OpenAI, Databricks, nvidia, Huggingface and their offerings • Risks and Limitations • Casestudy : Financial Services/Health care/Supply chain/E - Commerce	Theory and Hands-On	• Acquire a comprehensive understanding of how Generative AI sets itself apart through creative capabilities across diverse modalities, including text, image, audio, video, and code. Participants will develop proficiency in creating GenAI models, learning the intricacies of training on diverse datasets using architectures like Transformers and GANs. Learning outcomes will include the ability to recognize the versatility of GenAI, understand various learning paradigms such as zero-shot, single-shot, and few-shot, and gain awareness of major industry players like Google, Meta, OpenAI, Databricks, Nvidia, and Hugging Face, along with their unique contributions. Participants will also grasp the potential applications of GenAI across industries such as CPG/ E-commerce/ Healthcare/ Supply Chain/ Financial Services, while being equipped with an understanding of emerging trends.	Instructor Led	1
2	Prompt Engineering	• What is Prompt Engineering and why is it important? • Types of prompt Single Prompt , Multiple Prompt, Hierarchical prompt • Elements of prompt, role of prompts on the output of Language Models, • Prompts & Tokens • "Prompt TuningCPG Use case " • "P-tuningBFSI Use case" • "Chain of thoughtData Science Use case" • "Instruction TuningE-Commerce usecase" • Best Practices for prompt engineering		• Participants will delve into the crucial practice of shaping language models through carefully crafted prompts. They will comprehend the significance of prompt engineering in directing the output of language models and learn about the various types of prompts, including single prompts, multiple prompts, and hierarchical prompts, with insights into when to use each. Participants will gain a deep understanding of the elements within prompts and their pivotal role in influencing language model responses, considering the interplay between prompt design and model output. Additionally, the course will cover the relationship between prompts and tokens, emphasizing the importance of managing token limitations. The exploration of prompt tuning and P-tuning will be enriched with real-world applications.		1

Detailed Design (2/3)

Day	Module	Topics	Remarks	Learning Outcomes	Mode	Duration in Hours
2	Introduction to Language Model and Diffusion Model architectures	• Timeline of Generative AI and Important Model Architectures • Model architectures (NLP): Transformer architecture, Attention is all you need • GPT architecture overview • T5 architecture overview • BART architecture overview • Model Architecture (CV): Diffusion models	Theory	• Understand the Architectures of GPT, Bert, T5 models.	Instructor Led	4
	Building LLM Apps and deployment	• Implementing Generative AI Use Cases using ChatGPT, Langchain and Huggingface models • Code generation and debugging • Data Analysis and Insights • Customer Support and Virtual Assistants (Chat bots) • Scientific Research and Analysis • Synthetic Data Generation • **Implementing End to end Machine Learning workflow with GenAI** • "Implementing end to end Machine Learning case study according toCRISP- DM, using GenAI"	Hands On	• Build GenAI applications for different use cases utilizing all the concepts learned in previous sessions. • Utilizing GenAI to implement ML work flow		10

Detailed Design (3/3)

Day	Module	Topics	Remarks	Learning Outcomes	Mode	Duration in Hours
3	Building LLM Apps and deployment	• Introduction to Huggingface LLM Models • Parameters (Temperature, top_p etc.) • Introduction to Langchain • Creating chains and agents • Hands-on development of RAG apps • RAG using wikipedia, youtube • RAG using database • RAG using documents	Hands On	• Learn to implement RAG apps using different data sources	Instructor Led	6
		• "Deployment of apps on local machine using streamlit, flask.Deployment of apps on cloud Azure/AWS/GCP using Flask/Django."		• Deploy the apps on local and cloud infrastructure		2
3	LLM fine tuning and deployment	• Prompt tuning • P-tuning • Instruction fine-tuning and LLM		• Learn how to fine tune an LLM for a specific use case. Deploy the fine tunes LLM on local or cloud		2
		• Transfer Learning • Quantization of LLM • LLM evaluation techniques • Deployment of finetuned LLM				6
Total Duration – 24 Hours						



Learner Category - Developer

1.AI Assisted Programming for Developer

Program Flow

Back »

Day 1

- Prompt Engineering

Day 2

- AI Tools
  - ✓Co-Pilot
  - ✓Tab Nine
  - ✓Code Whisperer
  - ✓Mutable

Day 3

- Advanced Prompts

Day 4 onwards

- Hands on project
  based on type of problem and technology use cases, co-developed with business inputs

Total – 32 Hours

unext

Program Coverage

Back »

Day 1 Coverage – Prompt Engineering

Prompt Engineering
Introduction to Prompt Engineering • What is Prompt Engineering and why is it important? • History and evolution of Prompt Engineering • Applications of Prompt Engineering in various industries and fields
Language Models and Prompts • Overview of Language Models and their capabilities • Role of Prompts in guiding Language Models • Understanding GPT-3 and its architecture
Effective Prompt Design • Characteristics of effective prompts • Best practices for prompt design • Examples of successful prompts and their impact

Program Design

Back »

Day 2 Coverage – AI Tools

Co-Pilot, Tab Nine, Code Whisperer, Mutable. Through examples, each tool will be introduced, walk throughs for different languages, pros and cons. If time permits, ChatGPT/GPT 4.0 for data analysis, and emails/content. How to use prompt engineering to code faster and better.

Day 3 Coverage – Advanced Prompts

Advanced Prompts and other AI tools (for content, emails, presentations, strategy, etc) - essential for client facing roles and team leads.

Day 4 onwards – Project

One day hands on projects based on type of problem and technology use cases, co-developed with business inputs.

Example - developing a new ensemble model in data science from scratch for a client. An ensemble model uses existing model output from multiple iterations followed by a voting mechanism to create a final set of predictions. Multiple ensemble models like Random Forest, XGBoost or Bagging are already available as libraries in Python. However, under certain circumstances, multiple models may be ensembled to create a new model if the predictive power of the new model is higher for certain types of data. This is often a complex problem solved by data science teams. However, most data scientists do not have the coding expertise to create Python libraries from scratch. A code helper tool can help generate both the shallow learners from scratch and also produce code which will use an existing or new ensemble voting mechanism and then merge the two. This can easily be then tested by data scientists. But what would have been a multi-team multi-month exercise can be completed within the data science team in a much shorter time frame.

Pair Programming with AI tool

Back »

- Using prompts, auto-complete suggestions to write efficient code
- Write and validate test cases
- Debug and fix code errors
- Refactoring code
- Identify potential security vulnerabilities in code and fixing
- Generate comments from code

Program - Outcome

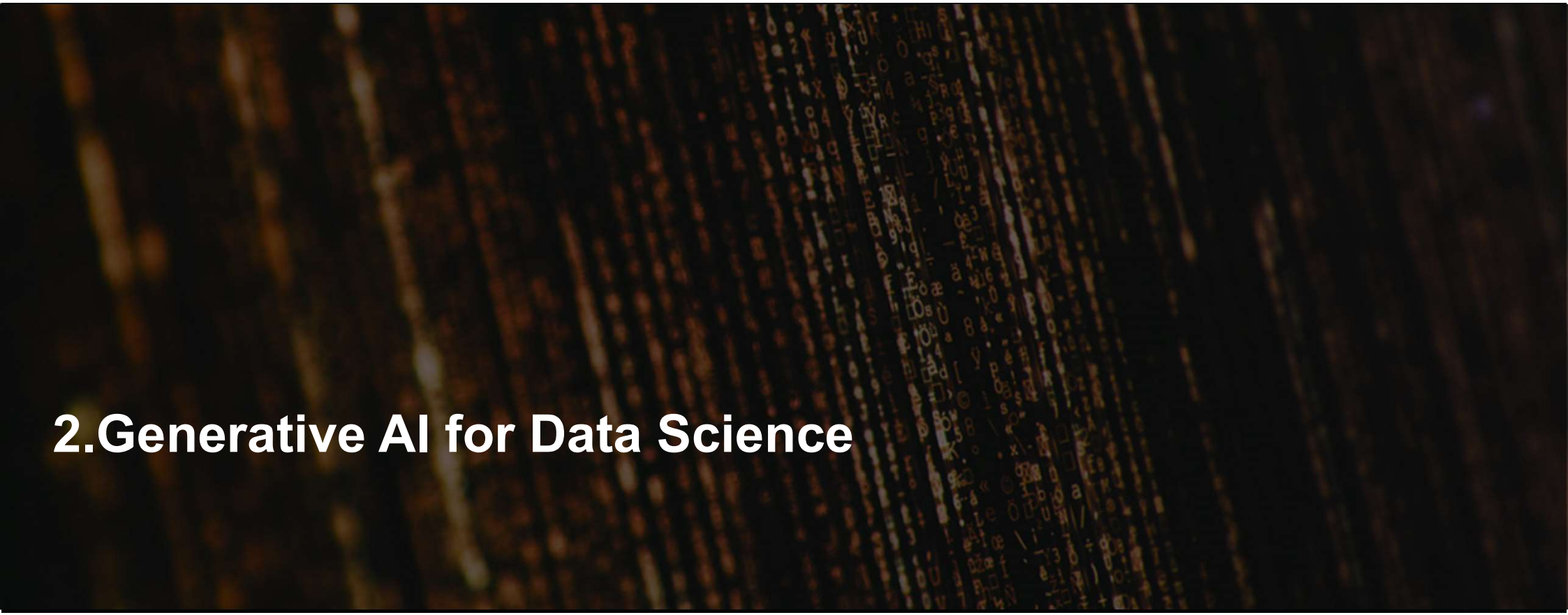
Back »

- Work seamlessly on the tool
- Understand prompting in the context of tool and problem statement at hand
- Code Generation
  - What the tool does right
  - What the tool cannot do (limitations)
  - Best practices
- Expertise on leveraging tool for enhanced productivity

Sample TOC

Back »

Day	Topics	Coverage	Duration (in Minutes)
Day 1	GitHub Copilot - Overview	Purpose and features Using AI to write code for you List of Supported Languages Language-Specific Features and Capabilities	60
	Setup and demo	Installation and Setup for VS code and IntelliJ	30
		Q&A	30
Day 2	Back end - Java	Creating simple POJO classes using Copilot in IntelliJ Creating core java application on banking domain using Copilot in IntelliJ	60
	Back end - MS	Creating the backend RESTful service for the Student listing application with CRUD operation. Creating the Repository, Service and Controller layer for the Student listing application. (VS code +IntelliJ)	60
Day 3	Front end - Angular/React	Creating basic JavaScript functions using Copilot Creating typescript functions inside components of React/Angular SPA application. Creating dynamic HTML UI elements in React/Angular components using Copilot. (VS code)	60
	Practice	Stepwise explanation of the Code Cleaning the Code Making the Code Robust Documenting the Code Debugging and fixing bugs	60
	Total		360



2.Generative AI for Data Science

Generative AI for Data Science – Program Summary

Back »

Data Scientist/Machine Learning Specialist

Topics

1.Introduction to Generative AII
2.Types of Generative Models
3.Overview of Large Language Models
4.Recurrent Neural Networks and LSTMs
5.Auto-encoders and Variational Auto-encoders (VAEs)
6.Generative Adversarial Networks (GANs)
7.Transformer Models for Generative AI
8.Language Models and Generative Pre-trained Transformers (GPTs)
9.Evaluation Metrics and Techniques for Generative Models
10.Advanced Concepts in Large Language Models
11.Case Studies and Applications
12.Hands-on Projects and Exercises
13.Deployment and Deployment Challenges
14.Ethical Considerations in Generative AI
15.Interdisciplinary Considerations
16.Recent Advances and Research Trends
17.Guest Lectures and Industry Perspectives
18.The Future of Generative AI and Language Models

Total – 40 Hours

Session Details- Data Scientist/Machine Learning Specialist (40 Hours)

Back »

1. **Introduction to Generative AI**
   - Overview of Generative AI
   - Applications and significance of Generative AI
2. **Types of Generative Models**
   - Key concepts and terminology
   - Comparison of Generative Models
3. **Overview of Large Language Models**
   - Key concepts and terminology
   - LSTM, GPT, BERT, and transformers
4. **Recurrent Neural Networks and LSTMs**
5. **Auto-encoders and Variational Auto-encoders (VAEs)**
6. **Generative Adversarial Networks (GANs)**
7. **Transformer Models for Generative AI**
8. **Language Models and Generative Pre-trained Transformers (GPTs)**
9. **Evaluation Metrics and Techniques for Generative Models**
10. **Advanced Concepts in Large Language Models**
    - Fine-tuning
    - Zero-shot learning
    - Few-shot learning
    - Discussion on current research and developments
11. **Case Studies and Applications**
    - Image generation
    - Text generation
    - Music generation
    - Real-world applications
12. **Hands-on Projects and Exercises**
13. **Deployment and Deployment Challenges**
    - Scalability
    - Model compression
    - Inference efficiency
    - Best practices for deployment
14. **Ethical Considerations in Generative AI**
    - Bias in Language Models
    - Fairness and accountability
    - Privacy and data handling
15. **Interdisciplinary Considerations**
    - Integration with natural language processing, computer vision, and robotics
16. **Recent Advances and Research Trends**
    - Self-supervised learning
    - Unsupervised representation learning
    - Novel architectures
17. **Guest Lectures and Industry Perspectives**
18. **The Future of Generative AI and Language Models**

Customized Programs for Developers

Gen AI – Masterclass

Program Details - GitHub Copilot Masterclass

Back »

Program Name	GitHub Copilot Masterclass (Awareness Session)
Duration	2.5 Hours
Target Audience	Developers & Senior Developers
Delivery Mode	Instructor Led/VILT

Program Details - Tabnine Masterclass

Back »

Program Name	Tabnine Masterclass (Awareness Session)
Duration	2.5 Hours
Target Audience	Developers & Senior Developers
Delivery Mode	Instructor Led/VILT

unext

Program Details - Amazon CodeWhisperer Masterclass

Back »

Program Name	Amazon CodeWhisperer Masterclass (Awareness Session)
Duration	2.5 Hours
Target Audience	Developers & Senior Developers
Delivery Mode	Instructor Led/VILT

unext

Gen AI – GitHub Copilot - Deep dive session for Java Developers (Studio)

Program Details - GitHub Copilot - Deep dive session for Java Developers (Studio)

Back »

Program Name	GitHub Copilot - Deep dive session for Java Developers (Studio)
Duration	56 Hrs / 8 Hrs per day
Target Audience	Developers & Senior Developers
Delivery Mode	Instructor Led/VILT

Detailed Design (1/4)

Day	Module	Learning Outcomes	Topic Coverage
Day 1	Overview of GitHub Copilot	By end of this Module you will be able to : 1. Install and Setup Github Copilot 2. Use AI to write code	What is GitHub Copilot?
			Purpose and Features
			Learn to use AI to write code for you
			List of Supported Languages
			Language-Specific Features and Capabilities
			Installation and Setup
	How GitHub Copilot Works	By the end of this Module you will be able to: 1. Integrate Copilot with IDEs and Code Editors 2. Filter out common vulnerable coding patterns 3. Support for offline code 4. Write code to make code more efficient	Integration with IDEs and Code Editors (IntelliJ, Visual Studio Code)
			Language Models and Machine Learning Techniques
			Code Generation Process
			Multi-line function suggestions
			Test generation
			Implement Algorithms and Patterns (Search, FCFS, Aggregator)
			Filter out common vulnerable coding patterns
			Block suggestions matching public code
			Indicate that licensed / copyright code is not suggested by tool or display.
			Support for offline mode
			Provide code assistance in the style of my company's style guide and org policies
			Write code to make code more efficient (e.g. run faster)
			Explain the logic of any existing methods (point by point).
			Explain an entire class and the methods inside it (with logic), in points.
			Add comments for existing method / class
	Programming Language Constructs and Patterns	By the end of this Module you will be able to: 1.Write code using OOPs concepts in Copilot 2. Implement patterns	Struct, While loop, Constant / Variable declarations, data types, creating arrays (Single, Multi)
			Class / Object creation using OOPs Concept (Inheritance, Overloading, Polymorphism, Abstraction, Encapsulation, Enum)
			Implement Patterns - Create Singleton, Abstract Factory, Prototype, Proxy, State, Visitor, Observer pattern classes
			Make code cheaper to run (less API calls)
			Convert any Java for loop with Java Streams

Detailed Design (2/4)

Day	Module	Learning Outcomes	Topic Coverage
Day 2	Writing Regex Patterns	By the end of this Module you will be able to: 1. Implement code based on regex pattern with Copilot	Based on regex pattern output switch case to be implemented.
			Based on the regex pattern output If..else condition code to be implemented .
	Static Web Pages with Copilot (HTML5+CSS3+BootStrap) (Case Study)	By the end of this Module you will be able to: 1. Create Static Web Pages with Copilot	Create the Home Page for a Static Web Page
			Create the Login Page
			Create the Contact Us Page
			Create the Service Page
			Creating css classes and use that in Html tags
Day 3	Angular Single Page Application with Copilot (Case Study)	By the end of this Module you will be able to: 1. Create Angular Single Page Application with Copilot	Create Html pages for About, Help
			Create Angular components for About, Help
			Create Html pages for login
			Create Angular component for Login
			Create Html pages for Pet Allocation
			Create Angular component for Pet Allocation
			Create application main module in Angular
			Routing modules
			File validation / Upload
			Validate UI Inputs (Regex)
Day 4	React Single Page Application with Copilot (Case Study)	By the end of this Module you will be able to: 1. Create React Single Page Application with Copilot	Create Html pages for About, Help
			Create Angular components for About, Help
			Create Html pages for login
			Create Angular component for Login
			Create Html pages for Pet Allocation
			Create Angular component for Pet Allocation
			Create application main module in Angular
			Routing modules
			File validation / Upload
			Validate UI Inputs (Regex)

Detailed Design (3/4)

Day	Module	Learning Outcomes	Topic Coverage
Day 5	Back-End Code Generating using Copilot + SpringBoot (Case Study)	By the end of this Module you will be able to: 1. Develop Back-end for SPA with Spring Boot using Copilot 2. Generate a model from an existing database using Copilot 3. Create SQL queries using PetClinic Database 4. Write FCFS algorithm using Copilot 5. Implement OAuth authentication type using Copilot 6. Integrate Back-end Server with Frontend Application	Create Factory method pattern to get the Pet object in PetClinic application
			Create Builder pattern to build the Pet object in PetClinic application
			Create entire POJO class & CRUD Endpoints for pet treatment
			Generate a model from an existing database Table (by providing the field names and types as input). (@Entity, @Table)
			Pet owner email address validation with regex patterns
			Once a model is created, write repository interface by extending JpaRepository.
			Write complex JPA query methods on repository interface (more complex than findByFirstName(String name))
			Microservices methods to be enclosed with Try..catch.. Exception blocks.
			Creating sql queries which will look for pet to owner mapping from different tables in PetClinic Database
			Write a FCFS algorithm for Pet Treatment based on available Veterinarians including critical cases.
			Creating Async & CompletableFuture methods in PetClinic application.
			Algorithms to encrypt the Sensitive data, credentials which will be used for most of the applications to clone the data and check-in the code
			Loop through the available Veterinarians and assign the pets using for loop
			Implement OAuth authentication type
			Integrate Back-end Server with Frontend Application
Day 6	JGit library	By the end of this Module, you will be able to: 1. Use the JGit Library for version control of source code	JGit library for source code activities (Clone, Pull, Push etc..)
	Migrating Code	By the end of this Module, you will be able to: 1. Migrate Spring Boot application to Quarkus	Convert Spring Boot annotations to Quarkus annotations
			Convert Spring Boot main method to Quarkus main method

Detailed Design (4/4)

Day	Module	Learning Outcomes	Topic Coverage
Day 7	Creating Terraform	By the end of this Module, you will be able to: 1. Write Terraform configurations using Copilot	To create compute data store and messaging
			Auto identify and update packages that needs to be imported.
	Cloud Programming and Deployment	By the end of this Module you will be able to: 1. Deploy the application to Cloud by configuring CI/CD 2. Write Lambda using Copilot	Containerize the Application
			Create Build & deploy Jenkins scripts for CI CD
			CI/CD Deployment to Cloud
			A/B experimentation
			AWS CW
			Lambda function to fetch cost for the treatment and notify the pet owner with details in an email.
			AWS SES to Send email from application
Total Duration – 56 Hours			

Gen AI – GitHub Copilot - Deep dive session for .Net Developers (Studio)

Program Details - GitHub Copilot - Deep dive session for .Net Developers (Studio)

Back »

Program Name	GitHub Copilot - Deep dive session for .Net Developers (Studio)
Duration	56 Hrs / 8 Hrs per day
Target Audience	Developers & Senior Developers
Delivery Mode	Instructor Led/VILT

unext

Gen AI – Amazon CodeWhisperer - Deep dive session for Java Developers

Program Details - Amazon CodeWhisperer - Deep dive session for Java Developers

Program Name	Amazon CodeWhisperer - Deep dive session for Java Developers
Duration	56 Hrs / 8 Hrs per day
Target Audience	Developers & Senior Developers
Delivery Mode	Instructor Led/VILT

Gen AI – Prompt Engineering - Deep dive session for Python Developers

Program Details - Prompt Engineering - Deep dive session for Python Developers

Program Name	Prompt Engineering - Deep dive session for Python Developers
Duration	80 Hrs / 8 Hrs per day
Target Audience	Developers & Senior Developers
Delivery Mode	Instructor Led/VILT

Detailed Design (1/2)

Day	Module	Learning Outcomes	Topics
1	AI / Machine Learning + Hands-on	Apply a holistic understanding of AI and Machine Learning concepts, from foundational principles to advanced topics such as deep learning, while mastering practical skills in utilizing machine learning libraries, solving real-world problems, addressing issues of bias and fairness, deploying models in production, and effectively monitoring and scaling ML systems through hands-on projects and case studies	• Introduction to the course • Introduction to Machine Learning • Supervised Learning: regression,classification • Unsupervised learning : Clustering • Deep learning : neural network for text and vision usecase • Analyze Machine Learning Libraries and Tools • Practical problems : bias and fairness, deploying ML models in production, Monitoring and scaling ML systems • Hands on – project/casestudy
2	Natural Language Processing (NLP) - 1	Gain comprehensive knowledge and practical skills in NLP, covering fundamental concepts, preprocessing techniques, text representation methods, text classification, language models, sentiment analysis, opinion mining, as well as text classification and categorization strategies.	• Introduction to Natural Language Processing • Preprocessing and Text Representation • Text classification • Understand Language Models • Explore Sentiment Analysis and Opinion Mining • UnderstandText Classification and Categorization
3	Natural Language Processing (NLP) -2	Be proficient in analyzing NLP libraries and tools, possess a comprehensive understanding of neural networks and word embeddings, and be able to apply Named Entity Recognition (NER) techniques effectively through hands-on projects or case studies.	• Analyze NLP Libraries and Tools • Neural Network Overview Word embedding • Explore Named Entity Recognition (NER) • hands on – project/casestudy
4	Large Language Models (LLMs)	Gain proficiency in Large Language Models (LLMs) by mastering their architecture, industry practices, vector stores, and the crucial embedding and ETL pipeline processes.	• Introduction to Large Language Models • Architecture of LLM stack • Industry practices , infrastructure and tools related to LLM stack • Vector store and related infrastructure • Embedding and ETL(Extraction,Transformation,Loading) pipeline

Detailed Design (2/2)

Back »

Day	Module	Learning Outcomes	Topics
5-6	Prompt Engineering - 1	Be able to proficiently apply prompt engineering principles and techniques, specifically focusing on understanding the elements of a prompt and implementing prompt engineering strategies for Software Development Life Cycle (SDLC) processes.	• Introduction to Prompt Engineering • Explore Elements of a prompt • Explore different prompt engineering principles/techniques • Prompt engineering for SDLC – part1
7-8	Prompt Engineering - 2	Master strategic prompt engineering for SDLC (Part 2), adeptly create prompts for vectorized data, and skilfully craft prompts tailored to specific use cases.	• Prompt engineering for SDLC – part2 • Prompt engineering for working with vectorized data • Create Prompts for Specific Use Cases
9	Open AI	Demonstrate proficiency in utilizing OpenAI products and features, including understanding Python SDK basics, implementing OpenAI integrations for various use cases with and without embeddings, addressing practical challenges such as rate limiting and data security, and applying acquired knowledge through hands-on projects or case studies.	• Introduction to OpenAI Products and Features • python sdk basics • openai integration for usecases -without embeddings • openai integration for usecases- with embeddings • practical problems : rate limiting, data security • hands on – project/casestudy
Total Duration - 80 Hours			

Gen AI – Prompt Engineering - Deep dive session for Java Developers

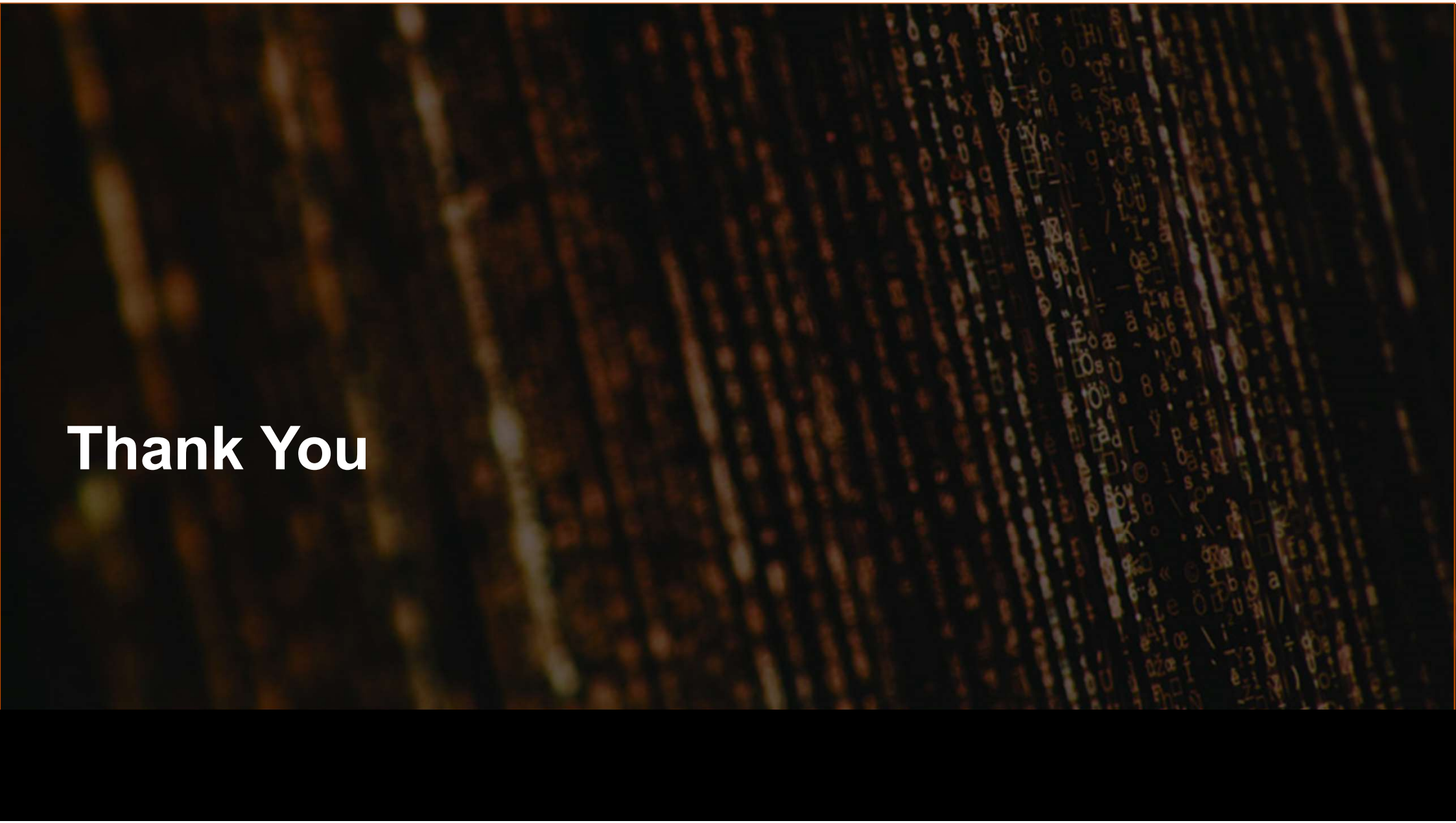
Program Details - Prompt Engineering - Deep dive session for Java Developers

Program Name	Prompt Engineering - Deep dive session for Java Developers
Duration	80 Hrs / 8 Hrs per day
Target Audience	Developers & Senior Developers
Delivery Mode	Instructor Led/VILT

Gen AI – Prompt Engineering - Deep dive session for .Net Developers

Program Details - Prompt Engineering - Deep dive session for .Net Developers

Program Name	Prompt Engineering - Deep dive session for Java Developers
Duration	80 Hrs / 8 Hrs per day
Target Audience	Developers & Senior Developers
Delivery Mode	Instructor Led/VILT


Thank You