



# Workshop 4: Building Chatbot RAG Systems with Vector Store, Langchain & Function Calling

Date



# Workshop Objective



## Advanced Retrieval-Augmented Generation



Building intelligent chatbots that retrieve and generate knowledge

### What you'll learn:

 **FAISS/PineCone**  
**Fast Vector Search**

**Langchain**  
**Prompt & Chain**  
**Management**

 **Function Calling**  
**Dynamic Capabilities**

 **Handle prompts**  
**effectively**

# Application Options

**Choose One or Define Your Own:**



**Customer Support**

**Intelligent FAQ bot with context-aware responses**



**Employee Onboarding**

**Assistant for new hire processes and policies**

**✂ IT Helpdesk Bot**

**Technical support and troubleshooting**





**Sales Lead Qualification**

**Product knowledge assistant for sales teams**




# AI Tools Usage Guidelines

 Tool / Tech	 Usage
<b>FAISS</b>	Local vector database for fast similarity search
<b>Langchain</b>	Building prompt chains, managing conversational flows, retrieval integration, function calling
<b>OpenAI or Langchain Function Calling</b>	Enhance chatbot by invoking functions for dynamic/external data responses
<b>Mock Data Generation</b>	Create synthetic datasets simulating realistic business/user data

## Team Composition & Roles

 **Teams of 5-7 participants** collaboratively develop all aspects

 **No fixed roles** – members share ideation, coding, prompt engineering, and testing

 **Focus:** End-to-end RAG pipeline from data embedding → retrieval → generation + function calling

# Deliverables by End of Workshop

 **Clearly defined problem statement and mock data schema**

 **FAISS, PineCone or vector store populated with embeddings**

 **Langchain chain configuration combining retrieval and generation**

 **Azure OpenAI function call integration extending chatbot abilities**

 **Fully functional chatbot prototype with UI or notebook**

 **Team presentation with demo, insights, and lessons learned**



# Timelines

<b>9:00 – 9:10</b>		<b>Stabilize seats for trainees, take attendance</b>
<b>9:10 – 10:00</b>		<b>Share artifact files with trainees . Describes the problem statement, deployment format, desired output</b>
<b>10:00 – 17:00</b>		<b>Trainees: Discuss and implement Submit all to SharePoint Trainer: Rotate multiple groups to support</b>

# THANK YOU!



**Ready to Build Amazing AI Tools?**

**Let's turn your repetitive tasks into automated solutions!**