hkpc Academy 生產力學院

AI System Development: RAG, AI Agent, MCP and Vibe Programming

CONNECTION TECHNOLOGY 裝備未來 FUTURESKILLS

Join our hands-on workshop to harness cutting-edge AI frameworks tailored to your business needs.

Using an interactive data analysis system as a case study, transform your ideas into reality—from concept to implementation!

Duration	6 Hours
Medium	Cantonese (supplemented with English terminology and handouts)
Course fee	Depends on number of participants, duration, venue and course content

Course Objectives

- **Understand** the concepts of Retrieval-Augmented Generation (RAG) and AI agents.
- **Implement** RAG frameworks effectively in practical applications.
- **Explore** the significance of context protocols in AI models.
- **Develop** applications using Vibe coding and integrate context-aware features.
- **Identify** best practices in context management and coding standards.

Target Audience

- **AI Enthusiasts:** Anyone eager to learn practical AI development tools
- **Developers:** Professionals aiming to advance their AI model-building skills
- **Business Analysts:** Analysts seeking to leverage RAG & context-aware AI for smarter data insights
- **Project Managers:** Leaders overseeing AI initiatives who require technical fluency
- **Students:** Learners in IT related fields exploring cutting-edge AI applications

Enquiry / Enrolment
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Course Outline

1. Introduction to RAG and AI Agents

- Overview of RAG
- Role of AI Agents in Modern Applications
- Hands-on: Preparation of AI programming

2. Understanding Retrieval-Augmented Generation (RAG)

- What is RAG?
- How RAG Works: Combining Retrieval and Generation
- Advantages of Using RAG in AI Models

3. Components of RAG Systems

- Data Retrieval Mechanisms
- Generative Models - Overview of Popular Models (e.g., ChatGPT, DeepSeek, Gemini)
- Integrating Retrieval with Generation

4. Implementing RAG in AI Agents

- Setting Up a RAG Framework
- Tools and Libraries for Implementation
- Hands-On Activity: Building a Simple RAG Agent online

5. Introduction to AI Model Context Protocol

- Overview of Context in AI Models
- Importance of Context Protocols
- Mini Project: Set up of a data analysis project with customer data

6. Understanding Context Protocols

- Definition and Components of Context Protocols
- How Context Affects AI Performance
- Examples of Context Protocols in Use

7. Introduction to Vibe Coding

- What is Vibe Coding?
- Key Features and Benefits
- Hands-on: Setting Up the online Vibe Coding Environments

8. Integrating Context Protocols with Vibe Coding

- Designing Context-aware Applications
- Practical Examples of Integration
- Hands-On Activity: Build a data analysis Vibe Application

9. Best Practices for Context Protocols and Vibe Coding

- Strategies for Effective Context Management
- Coding Standards in Vibe
- Common Pitfalls and How to Avoid Them
- Mini Project Hands-on: Finishing the mini project with best practices

10. Future Trends and Applications

- Emerging Technologies in AI Context
- Vibe Coding in Modern Development
- Potential Use Cases

11. Q & A and Wrap-Up

- Open Floor for Questions
- Summary of Key Takeaways