

5-Day AI Agents Intensive Course with Google

Organizer: Kaggle-Mentor3

Platform: Online (Kaggle, Discord, YouTube)

Duration: 5 Days

Course Overview

The **5-Day AI Agents Intensive** is an online course crafted by Google's ML researchers and engineers. It is designed for developers who want to explore the foundations and practical applications of AI agents.

Key Learnings: - Core components: models, tools, orchestration, memory, and evaluation. - How to build agents that go beyond LLM prototypes into production-ready systems. - Hands-on experience through codelabs, whitepapers, and podcasts. - Capstone project to consolidate learning.

Learning Format: - Conceptual deep dives - Hands-on codelabs - Live discussions and daily livestreams - Community interaction via Kaggle Discord

How the Course Works

- **Daily Content Release:** New assignments posted each day on Kaggle.
- **Assignment Notifications:** Assignment materials shared on Kaggle Discord and via follow-up email.
- **Support & Discussion:** Discord channels monitored by Google researchers.
- **Daily Livestreams:** Hosted by Kanchana Patlolla and Anant Nawalgaria with special guests. Livestream recordings will be shared on Discord.
- **Course Completion:** Complete all materials for best results. Assignment submission is optional.
- **Capstone Project:** Build an AI agent applying course concepts. Eligible participants receive a Kaggle badge.

Community Guidelines: Follow [Kaggle's community guidelines](#).

Setup Instructions

1. **Kaggle Account:** Sign up, learn how Notebooks work, and phone verify your account.
 2. **AI Studio Account:** Sign up and generate an API key.
 3. **Kaggle Discord:** Join the server and the following channels:
 4. **#5dgai-announcements** – official course announcements & recordings
 5. **#5dgai-introductions** – meet other participants
 6. **#5dgai-question-forum** – ask questions and discuss assignments
 7. **#5dgai-general-chat** – general discussion
 8. Link Kaggle account to Discord [here](#) for full access.
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Daily Curriculum

Day 1: Introduction to Agents

Focus: Agent capabilities, Agent Ops, interoperability, and security.

Codelabs: - Build your first AI agent using Gemini and ADK.

- Build your first multi-agent system using ADK.

Assignments: 1. Listen to the summary podcast episode.

2. Read the "Introduction to Agents" whitepaper.

3. Complete codelabs.

What I Learned: - Understanding the fundamentals of AI agents. - How to structure multi-agent systems. - Practical use of ADK and Gemini to build functional agents.

Day 2: Agent Tools & Interoperability with Model Context Protocol (MCP)

Focus: External tools, MCP, architectural components, communication layer, and enterprise readiness.

Codelabs: - Create custom tools using Python functions.

- Implement MCP and long-running operations with human approvals.

Assignments: 1. Listen to the summary podcast episode.

2. Read the "Agent Tools & Interoperability with MCP" whitepaper.

3. Complete codelabs.

What I Learned: - How to extend agent capabilities using external tools. - MCP architecture and interoperability between agents. - Managing long-running operations with human-in-the-loop approvals.

Day 3: Context Engineering: Sessions & Memory

Focus: Context engineering, Sessions (short-term), Memory (long-term persistence).

Codelabs: - Manage conversation history with stateful agents.

- Implement long-term memory across sessions.

Assignments: 1. Listen to the summary podcast episode.

2. Read the "Context Engineering: Sessions & Memory" whitepaper.

3. Complete codelabs.

What I Learned: - How to make agents stateful. - The difference between session-based and long-term memory. - Techniques for context engineering to create personalized conversations.

Day 4: Agent Quality

Focus: Evaluation framework, observability, logs, traces, metrics, LLM-as-a-Judge, Human-in-the-Loop evaluation.

- Codelabs:** - Use logs, traces, and metrics to debug agents.
- Evaluate agent response quality and tool usage.

- Assignments:** 1. Listen to the summary podcast episode.
2. Read the “Agent Quality” whitepaper.
3. Complete codelabs.

What I Learned: - How to implement observability in AI agents. - Monitoring agent behavior using logs, traces, and metrics. - Evaluating agent performance and quality of responses.

Day 5: Prototype to Production

Focus: Deployment, scaling, productionization, and A2A Protocol.

Codelabs: - Build multi-agent systems with A2A Protocol.

- Optional: Deploy agent to Vertex AI Agent Engine on Google Cloud.

- Assignments:** 1. Listen to the summary podcast episode.
2. Read the “Prototype to Production” whitepaper.
3. Complete codelabs.

What I Learned: - How to take an AI agent from prototype to production. - Using A2A Protocol for agent collaboration. - Deploying and scaling agents on Google Cloud.

Final Reminders and Announcements

- **Capstone Project:** Create an AI agent project leveraging key course concepts. Top 12 projects receive Kaggle swag and social media feature. Participation is optional.
 - **Kaggle Badge and Certificate:** Participants in Capstone Project are eligible. Certificates added by end of December 2025.
 - **Future Learning:** Google’s **Gemini Enterprise Agent Ready (GEAR)** initiative launches early 2026 for further exploration of AI agents.
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