

# AI & LangChain Learning Roadmap (2 Hours/Day Plan)

## Overview

This roadmap outlines a learning path for mastering LangChain, OpenAI, and related AI agent concepts.

The schedule assumes a 2-hour daily commitment and targets beginner-to-intermediate proficiency.

## Estimated Time Per Topic

### LangChain - 7-10 days

Learn basics: chains, tools, memory, agents, loaders. Try simple projects like chatbot or Q&A.

### OpenAI Platform - 3-4 days

Play with APIs, test temperature, top\_p, max tokens, etc. Use Playground and API directly.

### Prompt Engineering - 4-5 days

Practice zero-shot, few-shot, chain-of-thought, and role-based prompts.

### Transformer Concepts - 5-7 days

Understand attention, encoder-decoder, tokenization, embeddings. Use visualizations.

### LangGraph - 4-6 days

Learn to build multi-node workflows. Try branching logic and stateful agents.

### Mock Projects - 7-10 days

Build 1-2 simple real-world apps (chatbot, document QA, summarizer).

### AI Agents - 4-6 days

Implement basic agent with tools like search, calculator, or file reader.

### Google Vertex AI - 3-4 days

Learn deployment flow using LLMs, endpoints, and model tuning.

### Azure OpenAI - 3-4 days

Understand authentication, deployment, and pricing differences from OpenAI.

### Reading Documentation - 1-2 days (ongoing)

Practice active reading of technical documentation and APIs.

## Suggested Weekly Breakdown

**Week 1: LangChain Basics + OpenAI Playground**

**Week 2: Prompt Engineering + Mock App**

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**Week 3: Transformer Theory + LangGraph**

**Week 4: Mock Project (End-to-End App)**

**Week 5: Agents + Deploy to Vertex AI**

**Week 6: Azure AI + Review Concepts**

**Week 7-8: Advanced Project + Deployment Practice**