Faysal Aziz

AI Foundations & Workflow Automation with n8n

From Awareness to Retrieval-Augmented Generation (RAG) - 5 days

FA-0069 · 5 days

Agentic & Generative AI · Automation, RPA & Power Platform

Introduction

AI has shifted from an interesting possibility to a practical tool that shapes daily work in subtle but powerful ways. To use it effectively, you need more than surface-level familiarity—you need to understand what's happening underneath, where the value comes from and how to put it to work in real workflows. This course gives you that clarity. With an instructor who brings more than 30 years of real industry practice, you'll explore modern AI concepts and build a functional RAG system in n8n, learning the same techniques teams use to automate knowledge across organisations.

Learning outcomes

By the end of this course, participants will be able to:

- Understand and articulate the core concepts of AI, machine learning, large language models and their business relevance.
- Explain how AI systems work under the hood (data, models, inference, feedback loops, risks).
- Set up and navigate n8n's interface, nodes and workflow design.
- Design and build a basic RAG system (ingestion, embedding, retrieval, generation) within n8n.
- Apply best-practices around data sources, vector stores, prompting, and evaluation of AI workflows.
- Critically assess a workflow's performance, identify gaps, and iterate improvements.
- Demonstrate their learning via a capstone project: building a small operational workflow in n8n and reflecting on lessons.

Prerequisites

- Basic familiarity with computers and web applications (creating accounts, navigating interfaces).
- Some exposure to programming or data (optional but helpful): e.g., comfortable reading pseudocode or understanding API basics.
- Willingness to engage in hands-on work (you'll build workflows, import data, test systems).
- Access to a laptop, internet connection and permission to use or trial necessary tools (n8n cloud or self-hosted, vector store/trial etc.).
- Curiosity and eagerness to link automation tools to AI-driven workflows.

Training outline

1. AI Awareness, How It Works & What's Under the Hood

Introduction to Artificial Intelligence

1. Definition and scope of AI
2. Differentiating AI, ML (Machine Learning), DL (Deep Learning)
3. Business drivers for AI adoption

Core Components of AI Systems

1. Data: training vs inference data, structured vs unstructured
2. Models: what is a model, large language models (LLMs), embedding models
3. Inference and generation: how a model makes predictions or generates outputs
4. Feedback loops, monitoring and learning in production

Under-the-Hood: Key Concepts

1. Embeddings and vector representations (semantic meaning)
2. Retrieval-Augmented Generation (RAG) – theory and rationale.
3. Vector stores, chunking, indexing, similarity search
4. Risks, limitations and considerations: hallucinations, bias, outdated data, retrieval errors.

Use-cases and industry demands

1. Document search & summarisation
2. Conversational agents with knowledge bases
3. Automation of knowledge-workflows, decision support
4. Real world example: how RAG improved document search time by ~90%.

2. Tool Overview & Getting Started with n8n

Introducing n8n: what it is, how it positions among automation/low-code tools

1. Community vs enterprise versions
2. Pre-built AI/RAG workflow templates (e.g., n8n's 460+ AI RAG templates)

Environment setup

1. Signing up for n8n (cloud/self-host)
2. Navigating the interface: nodes, workflows, triggers, integrations
3. Connecting your first node: e.g., HTTP Request, OpenAI, Webhook

Workflow design best-practices

1. Modular design: breaking tasks into nodes
2. Error handling and logging
3. Versioning, collaboration and documentation

3. Building a Basic Retrieval-Augmented Generation (RAG) Workflow in n8n – Part 1

Designing the workflow architecture

1. Input trigger (e.g., webhook, form, UI)
2. Document ingestion and processing: file upload, text extraction, cleaning
3. Embedding generation and storage: choosing vector store or database

Implementing ingestion

1. Node by node: e.g., HTTP Request → Function/Code node to clean text → Storage or index node
2. Chunking strategy: size, overlap, metadata
3. Embedding model selection and integration

Storage and indexing

1. Vector store choices (self-hosted vs cloud)
2. Managing metadata, access control and retrieval subsets
3. Creating retrieval endpoints in n8n

4. Building a RAG Workflow in n8n – Part 2 (Retrieval & Generation, Evaluation)

Retrieval implementation

1. Semantic search node: vector query, similarity threshold
2. Filtering by metadata, context narrowing
3. Multi-source retrieval: using web search + internal knowledge.

Generation / LLM integration

1. Prompt design: system, user, context injection
2. Handling retrieved context: how much to include? How to summarise?
3. Post-processing outputs: format, channel delivery (web, email, Slack)

Evaluation and iteration

1. Measuring relevance, accuracy, latency
2. Identifying hallucination, outdated knowledge, retrieval gaps
3. Iterating chunking, metadata, embeddings, prompting
4. Best-practices for production readiness: logging, monitoring, versioning

5. Review, Capstone & Way Forward

Review of all modules

1. Recap AI awareness, n8n workflow concepts, RAG pipeline, building & evaluation
2. Discussion: what worked, what challenges were encountered, lessons learned

Capstone project

1. Participants will build (or complete) a mini workflow in n8n: e.g., a knowledge-bot that ingests a domain (e.g., company policy / FAQs), indexes it, responds to user queries via RAG pipeline.
2. Presentations: each participant (or team) shares their workflow design, challenges, results and next steps.

Way forward: industry demands & next steps

1. Scaling workflows: performance, concurrency, data growth
2. Governance, ethics and compliance in AI workflows
3. Emerging trends: agentic RAG (autonomous retrieval/generation workflows)
4. Continuous learning: staying current in AI & automation, community resources for n8n and RAG development.

© 2026 Faysal Aziz · Kuala Lumpur

https://faysalaziz.com/courses/ai-foundations-workflow-automation-with-n8n/