



Red Hat

AI Fundamentals: Key Takeaways

This document compiles the key takeaways from each lesson of the **AI Fundamentals** course.

Lesson 1: Introduction

Here are the key takeaways from Lesson 1.

- To be a successful seller, you need to be able to hold casual conversations about artificial intelligence (AI) with confidence.
- Part of what makes the incredible growth in AI possible is Moore's law, which states that the number of transistors in an integrated circuit doubles approximately every two years.
- Ultimately, as a seller, you should care about AI because your customers do.
- The market for AI-related spending is large and only going to grow larger within the next few years.
- AI is a branch of computer science that enables machines to perform tasks that typically require human intelligence.
- Machine learning (ML) is a subcategory of AI that uses algorithms to identify patterns and make predictions within a set of data.

Lesson 2: Predictive AI

Here are the key takeaways from Lesson 2.

- Predictive AI is a common type of artificial intelligence system used in business applications that predicts or forecasts outcomes based on historical data.
- Predictive AI is an integral part of many everyday activities such as conducting web searches, texting, shopping online, and engaging with video and music streaming services.

- Data science is an interdisciplinary field that leverages mathematical, statistical, and computational techniques to extract knowledge and insights from structured and unstructured data.
- Some of the tasks data scientists perform include data collection, data cleansing, model selection and training, and evaluation and validation of those models.
- Examples of enterprises using predictive AI include logistic companies employing it to optimize delivery routes and prevent package theft, and banks or other financial institutions using it to identify fraud, money laundering, and other financial crimes.

Lesson 3: Generative AI

Here are the key takeaways from Lesson 3.

- The Turing test is a well-known experiment designed to assess the ability of a machine to exhibit intelligent behavior that is indistinguishable from that of a human. In the Turing test, a human evaluator reviews text from a conversation between two participants: a human and a machine. A machine is said to pass the test if the evaluator cannot reliably tell the human participant from the machine.
- Generative AI is AI technology that relies on deep learning models trained on large data sets to create new content.
- Deep learning is a specialized form of machine learning that teaches computers to process data by using an algorithm inspired by the human brain and neural networks. Deep learning teaches computers to learn through observation, imitating the way humans gain knowledge.
- Some examples of generative AI include AI-generated summaries of customer reviews on Amazon, chatbots such as ChatGPT generating content based on a text prompt, AI-generated highlight reels from sporting events, and Red Hat's KCS Solution Summaries.
- A large language model (LLM) is a type of AI program designed to understand and generate human language.
- Creating an LLM from scratch requires a tremendous amount of money, expertise, and resources. For all but a handful of organizations, creating such a model is out of reach; most organizations are likely to start with a foundation model.
- There are a variety of approaches an organization might use when working with a foundation model. One of the most popular approaches is retrieval-augmented

generation (RAG), a method that involves getting better answers from a generative AI application by linking an LLM to an external resource.

- There are several issues associated with LLMs, including massive energy and resource costs, a lack of transparency with regard to how models are trained, biases in model training, hallucinations, data recency, and issues related to copyright and privacy.