



# Intro to Neural Networks + Overview of AI Architectures

Picking the Right Model for the Right Modality

## Introduction

Choosing the right AI architecture is critical for building effective AI systems. In this case study, you will step into the role of an AI solutions architect working on a disaster response system. Your task is to evaluate different data sources, analyze their challenges, and determine the most appropriate AI models to handle them.

## Scenario: AI-Powered Disaster Response System

A government agency is developing an AI-powered disaster response system to assist emergency teams in real time. The system will need to:

- Analyze **satellite images** to assess damage and prioritize rescue efforts.
- Process **emergency calls** to detect high-risk situations.
- Aggregate and analyze **social media posts** to identify areas needing assistance.
- Integrate **historical disaster data** to predict future risks.

Your team has been assigned to design the AI model selection strategy for this system.

## Your Task (Group Activity in Breakout Rooms)

---

You will work in small groups to complete this case study. Each group will analyze the scenario, decide on the best AI architectures for the system, and prepare to present their findings to the class.

### Step 1: Data Analysis

Review the different types of data the system will process. Consider the challenges that may arise when working with each data type and how these challenges might affect AI model performance.

### Step 2: Model Selection

Determine which AI architectures would be most effective for each data type. Consider factors such as:

- The structure and complexity of the data.
- The computational requirements of different models.
- The need for real-time or batch processing.
- Trade-offs between accuracy, speed, and interpretability.

### Step 3: Justification & Recommendations

Prepare a brief summary outlining your model selection decisions. Be ready to explain why your chosen models are best suited for each data type and how they will contribute to the overall success of the disaster response system.

## Deliverables

---

- A **table or list** summarizing your AI model selections for each data type.
- A **brief justification** explaining why each model is appropriate.
- Insights on potential challenges and trade-offs in AI architecture selection.

# Discussion & Debrief

---

After completing the group activity, the instructor will randomly select a couple of groups to present. Be prepared to:

- Present your model selections and justifications.
- Discuss the trade-offs and challenges of your approach.
- Compare your solutions with those of other groups.
- Reflect on how multimodal AI could improve disaster response efficiency.

---

[< Previous](#)

© 2025 General Assembly  
[Attributions](#)