



DIPLOMADO EN APRENDIZAJE MAQUINA Y PROFUNDO  
APLICADO A GRANDES VOLUMENES DE DATOS  
(Machine Learning, Deep Learning y Big Data)

**PROYECTO PAPIME PE103124 2024-2025**

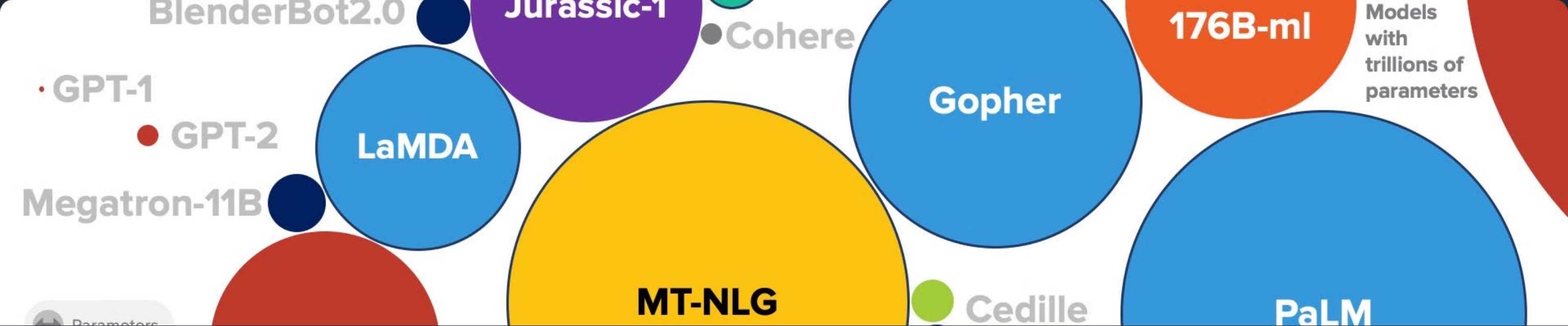
Módulo II. Deep Learning, del 29 de julio al 30 de agosto 2024

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# Introduction to LLM Developers

Unlock the power of Large Language Models (LLMs) with our expert LLM developers. Revolutionize your business by integrating cutting-edge AI technology into your products and services.



# What are Large Language Models (LLMs)?

## 1 Powerful AI Systems

LLMs are advanced neural networks trained on vast amounts of text data to understand and generate human-like language.

## 2 Versatile Applications

LLMs can be applied to a wide range of language-based tasks, from natural language processing to content creation.

## 3 Continual Learning

LLMs can be fine-tuned and updated to improve their performance on specific tasks or domains.

# Benefits of Hiring LLM Developers

## Innovative Solutions

LLM developers can create unique, AI-powered applications that give your business a competitive edge.

## Increased Efficiency

LLMs can automate and streamline various business processes, improving productivity and reducing costs.

## Enhanced User Experience

LLM-powered applications can provide more natural and intuitive interactions for your customers and employees.

# Key Skills of LLM Developers

## Machine Learning Expertise

LLM developers must have a strong understanding of machine learning algorithms and techniques.

## Natural Language Processing

Proficiency in NLP is essential for designing and implementing LLM-based systems.

## Software Engineering

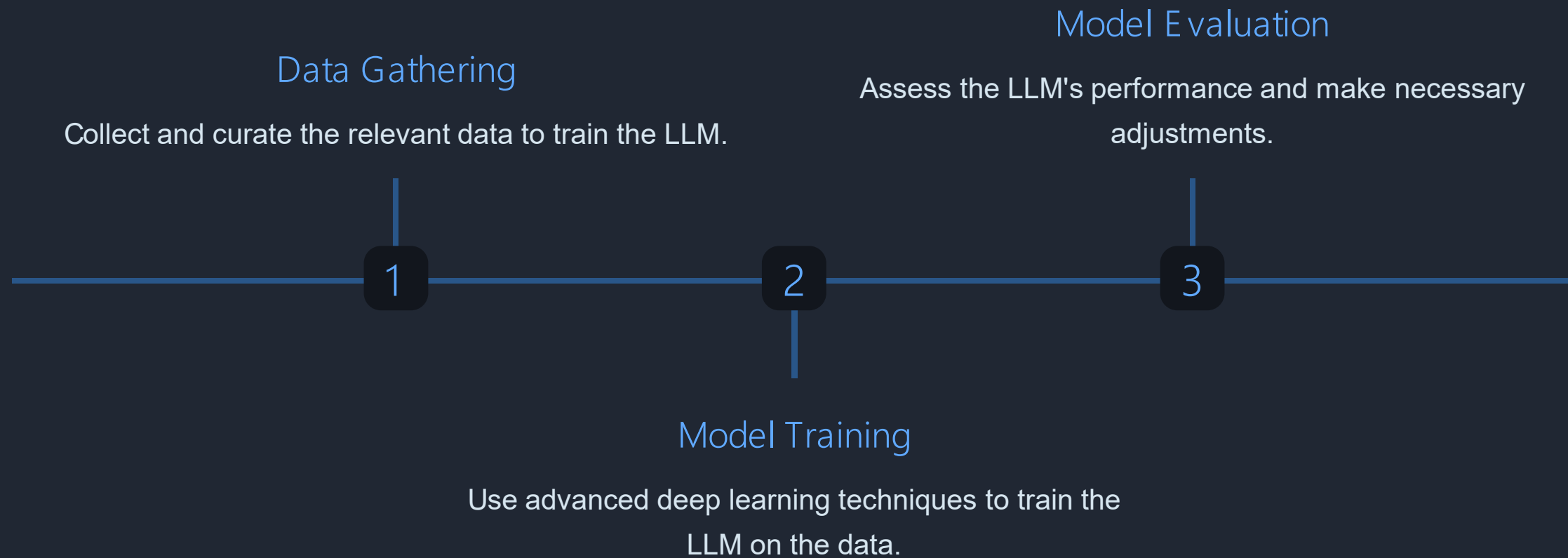
LLM developers need solid software engineering skills to build scalable and reliable applications.

## Domain Knowledge

Understanding the specific industry or use case is crucial for tailoring LLMs to your business needs.



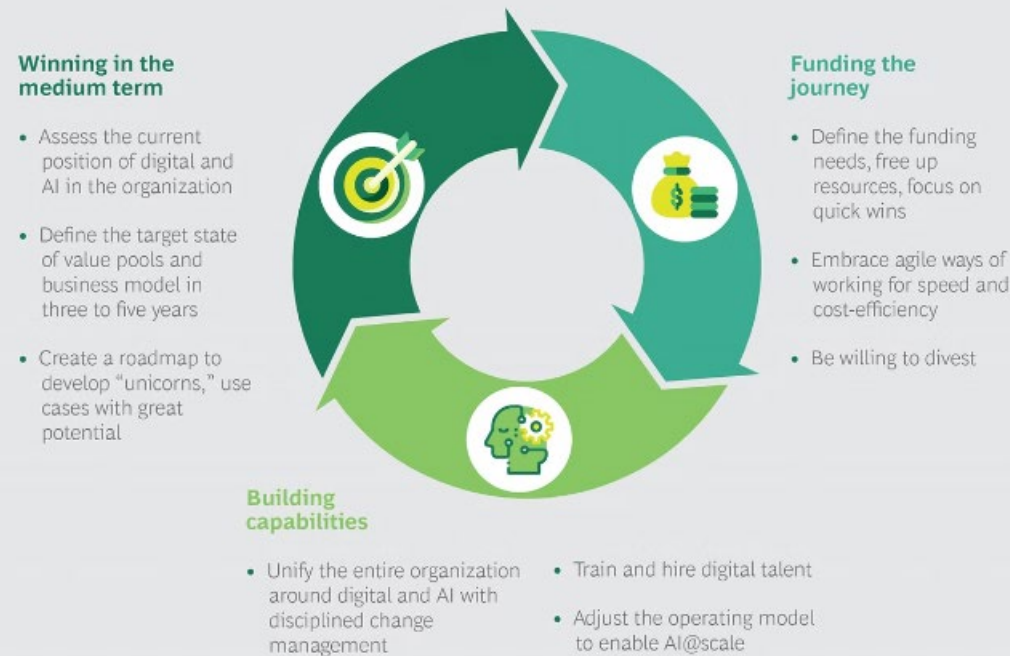
# LLM Development Process





# Integrating LLMs into Your Business

EXHIBIT 4 | A Transformation Approach to Flip the Odds of Success



Sources: BCG interviews and analysis.

1

## Identify Use Cases

Determine the areas in your business where LLMs can provide the most value.

2

## Pilot Integration

Start with a small-scale pilot to test the LLM's capabilities and performance.

3

## Scale and Optimize

Gradually expand the LLM's deployment and refine the integration based on feedback.

# Challenges and Considerations



## 1 Ethical Implications

Address potential biases and ensure the responsible use of LLMs to protect user privacy and data.

## 2 Technical Limitations

Understand the current limitations of LLMs and plan for future advancements and improvements.

## 3 Talent Acquisition

Recruit and retain skilled LLM developers who can keep up with the rapidly evolving field.





# Selecting the Right LLM Developer



## Proven Track Record

Look for developers with a strong portfolio of successful LLM projects.



## Collaborative Approach

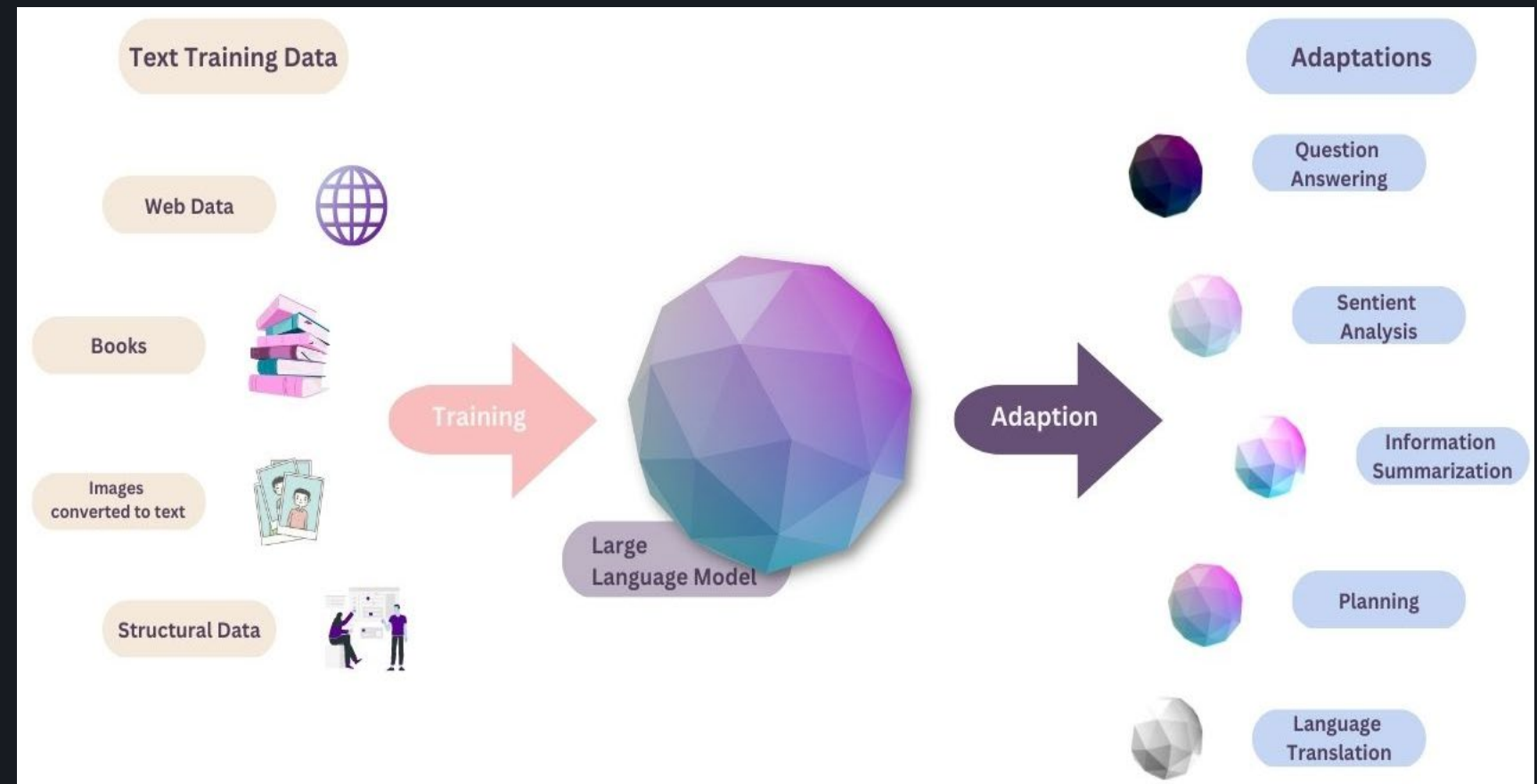
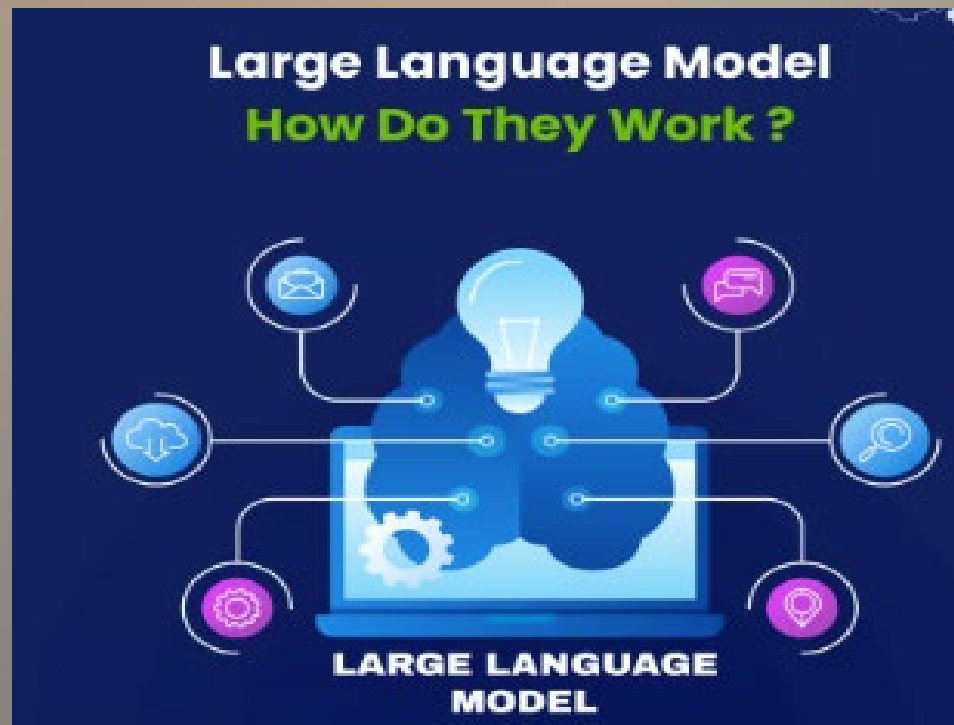
Find developers who can work closely with your team to align with your business goals.



## Innovative Mindset

Prioritize developers who stay up-to-date with the latest LLM advancements and techniques.

# How LLMs work



# LLMs processing

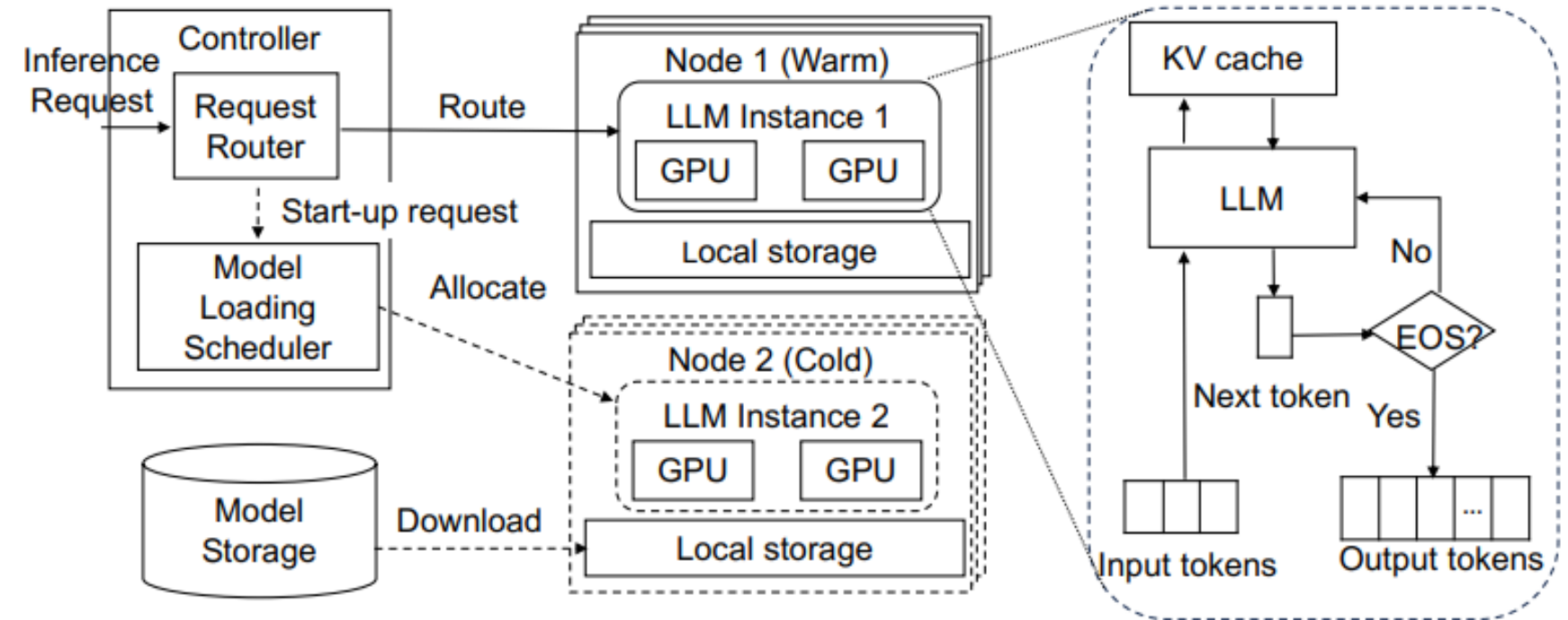
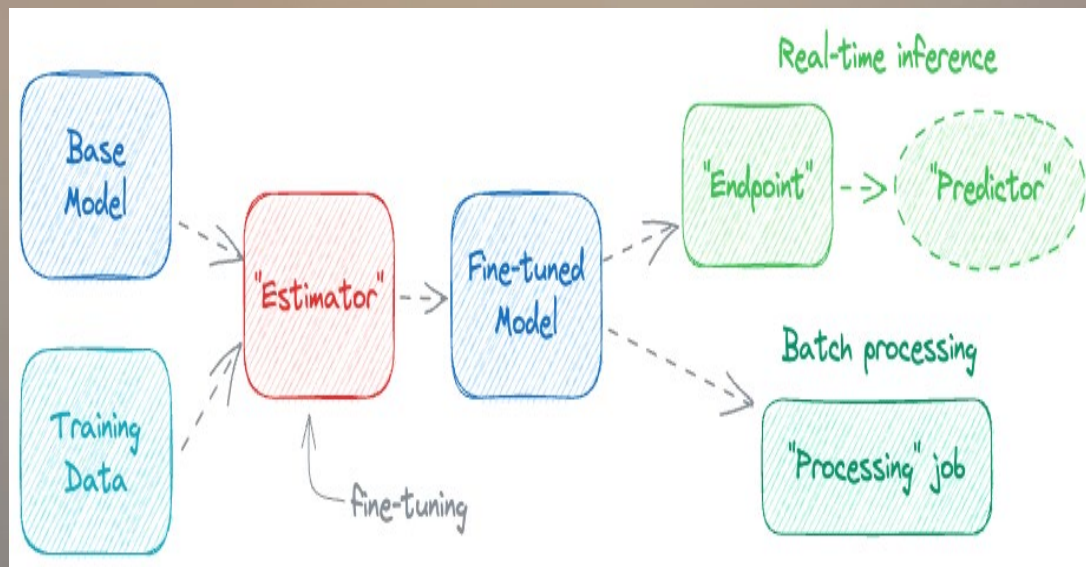
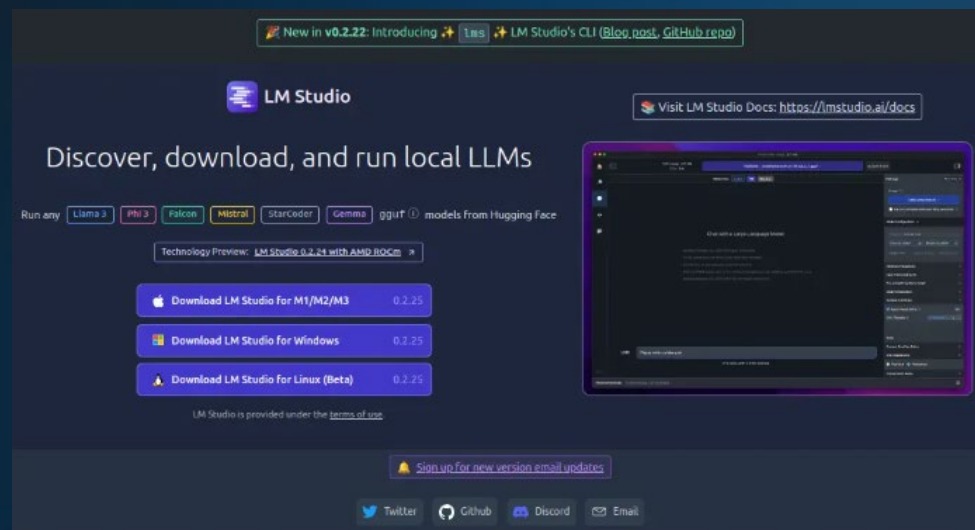


Figure 1: Overview of LLM serverless inference systems



# Install on server or locally



## 1 Download LM Studio AppImage

<https://lmstudio.ai/>

## 2 Running a Language Model Locally in Linux

After successfully installing and running LM Studio, you can start using it to run language models locally. For example, to run a pre-trained language model called GPT-3 or Llama3 (download over 15GB).

## 3 Talent Acquisition

Recruit and retain skilled LLM developers who can keep up with the rapidly evolving field.



# Top Ten LLMs 2024



LLM	Developer	Multimodal?	Access
<a href="#"><u>GPT</u></a>	OpenAI	Yes	Chatbot and API
<a href="#"><u>Gemini</u></a>	Google	Yes	Chatbot and API
<a href="#"><u>Gemma</u></a>	Google	No	Open
<a href="#"><u>Llama</u></a>	Meta	No	Chatbot and open
<a href="#"><u>Claude</u></a>	Anthropic	Yes	Chatbot and API
<a href="#"><u>Command</u></a>	Cohere	No	API
<a href="#"><u>Falcon</u></a>	Technology Innovation Institute	No	Open
<a href="#"><u>DBRX</u></a>	Databricks and Mosaic	No	Open
<a href="#"><u>Mixtral 8×7B and 8×22B</u></a>	Mistral AI	No	Open source
<a href="#"><u>Phi-3</u></a>	Microsoft	No	Open
<a href="#"><u>Grok</u></a>	xAI	No	Chatbot and open

# References :



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- <https://zapier.com/blog/best-llm/>
- <https://www.tecmint.com/lm-studio-run-llms-linux/>
- [https://www.server-world.info/en/note?os=Ubuntu\\_22.04&p=llama&f=1#google\\_vignette](https://www.server-world.info/en/note?os=Ubuntu_22.04&p=llama&f=1#google_vignette)