

Tech Stack for Artificial Intelligence

The software you need to know to build an Ai venture

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What is the Ai Tech Stack?



The AI tech stack refers to the technologies, frameworks, libraries, and tools used to develop and deploy AI applications. It is a complex and ever-evolving ecosystem, but there are some core components that are essential for most AI projects.



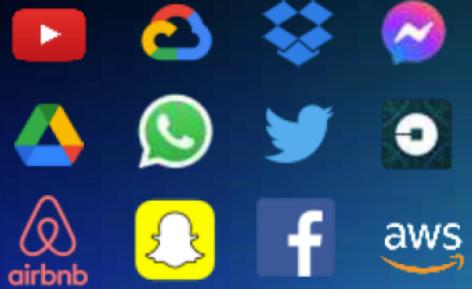
رؤية ٢٠٣٠

VISION 2030

المملكة العربية السعودية
KINGDOM OF SAUDI ARABIA



Web 1.0
“Read Only”,
Decentralized
Information Economy



Web 2.0
Participatory,
Centralized
Platform Economy



Web3
No Intermediates,
Decentralized
Token Economy



Programming Language





Programming Language

Programming language: Python

Python is a popular programming language for AI development because it is easy to learn and use, and it has a large and active community. It also has a wide range of libraries and tools for AI tasks, such as NumPy, SciPy, and Pandas.



Deep Learning Network



TensorFlow





Cloud Platform: AWS



TensorFlow



The thumbnail is a video frame from a TensorFlow tutorial. On the left, there's a large orange triangle containing the white TensorFlow logo (a stylized 'T' and 'F'). Below it, the text "Intro to ML" is displayed in a large, dark font. At the bottom, the text "Coding TensorFlow" is shown in a smaller, orange font. On the right, a man with grey hair and glasses, wearing a dark hoodie over a t-shirt that says "Learn & Connect Create", stands in front of a white background. He is overlaid with a diagram of a neural network, showing nodes (circles) and connections (curved lines). In the bottom right corner of the frame, there is a black rectangle containing the time "7:18".



Programming Language

Deep learning framework: TensorFlow

TensorFlow is a popular deep learning framework that is used by researchers and engineers around the world. It is open source and free to use, and it offers a wide range of features and capabilities for building and training deep learning models.



Hardware accelerator





Hardware Accelerator

Hardware accelerator:GPU(graphics processing units) are specialized processors that are well-suited for accelerating deep learning workloads. GPUs can significantly speed up the training and inference of deep learning models.



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Cloud Platform

Cloud Platform: AWS (Amazon Web Services) is a popular cloud platform that offers a wide range of services for AI development and deployment. AWS offers services for data storage, compute, machine learning, and more.

AWS (Amazon Web Services)





Data Processing Tools





Apache Spark, Hive

SPARK and HIVE are both technologies used in big data processing.

Apache Spark is a fast and general-purpose distributed computing system. It provides in-memory processing for large-scale data processing tasks and supports various programming languages.

Apache Hive, on the other hand, is a data warehouse infrastructure built on top of Hadoop. It facilitates querying and managing large datasets stored in Hadoop Distributed File System (HDFS) using a SQL-like language called HiveQL.

While Spark is more versatile and can handle various processing tasks, including batch processing, machine learning, and graph processing, Hive is specifically designed for data warehousing and querying large datasets in a distributed environment.



Data Processing Tools

Data processing tools: Apache Spark, Hive

Apache Spark and Hive are open source data processing tools that can be used to prepare and process data for AI applications. Spark is a distributed computing framework that can be used to process large datasets efficiently. Hive is a data warehouse software that can be used to query and analyze large datasets.

Version Control System



Git



Git is a distributed version control system used for tracking changes in source code during software development. It allows multiple developers to collaborate on a project, keeping track of changes, managing different versions of the code, and merging contributions seamlessly. Developed by Linus Torvalds, Git is widely used in the software development industry and is known for its speed, flexibility, and branching capabilities. It helps teams work efficiently, maintain a history of changes, and coordinate their efforts in a collaborative coding environment.

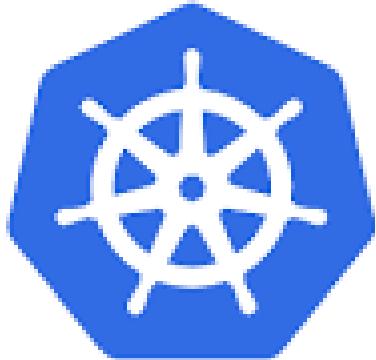


Version Control System

Version control system: Git

Git is a distributed version control system that is used to track changes to code and other files. Git is essential for any AI project, as it allows developers to collaborate on code and track changes over time.

Deployment Tool



kubernetes



Kubernetes



Kubernetes, often abbreviated as K8s, is an open-source container orchestration platform. It automates the deployment, scaling, and management of containerized applications. Containers are lightweight, portable units that package an application and its dependencies, making it easier to deploy and run consistently across various computing environments.



Deployment Tool

Deployment tool: Kubernetes

Kubernetes is an open source container orchestration platform that can be used to deploy and manage AI applications. Kubernetes makes it easy to scale and manage AI applications in production.



Conclusion

The AI tech stack is a complex and ever-evolving ecosystem, but the components discussed in this presentation are essential for most AI projects. By using the right tools and technologies, developers can build and deploy scalable and reliable AI applications.



Additional notes:

- The AI tech stack discussed in this presentation is just one example. There are many other tools and technologies that can be used for AI development and deployment.
- The specific tools and technologies that are best for a particular AI project will depend on the specific requirements of the project.
- It is important to note that the AI tech stack is constantly evolving. New tools and technologies are emerging all the time, and it is important to stay up-to-date on the latest developments.



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