What Is Deep Learning?

Deep Learning in Everyday Life













66 Siri, text Rigo, 'I'm on my way'



How can I help you today?

What Is Deep Learning?

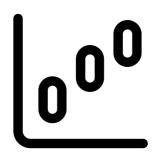
Short answer:

Machine learning that works

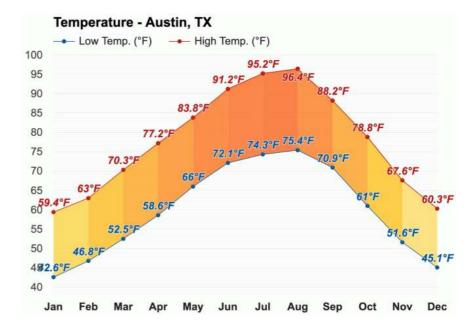
onger answer:				
	Machine Learning Deep Learnin	ng Models	Statistics	
	रिंडे र्श्लू		000	

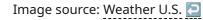
Statistics

- Study of **data**
- Goal: understand the properties of data
- Defines the fundamental mathematical language



Statistics: An Example

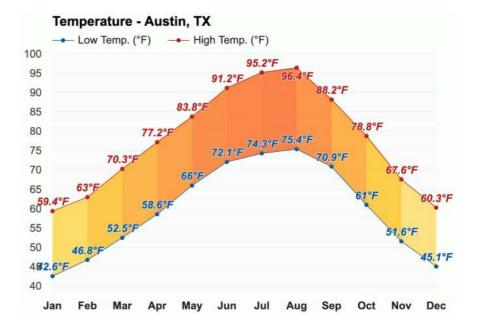


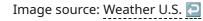


Models

- Input: $x \in \mathbb{R}^n$
- Output: $y \in \mathbb{R}^m$
- Parameters: θ

$$f_ heta: x o y$$





How Are Models Used?

Statistics

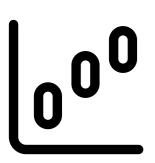
- Data analysis
- Explanation

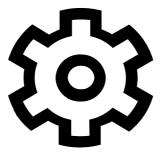
Machine Learning

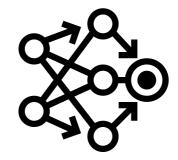
Prediction

Deep Learning

- Utilizes deep networks
- Bigger models!







A Brief History

_

	Early machine learnin	g	Rise of mac	hine learning		Rise of deep learning	
1957	1969	1986	1990s	2005	2010	2012	2017
Perceptron	n Perceptrons (book)	Backpropagation	Rise of machine learning	"Deep Learning" coined	Deep learning in speech recognition	Deep learning in vision	Deep learning in NLP
	Start of AI winter	Revival of neural networks					
ł	•	ļ	•	•	*	*	¥

What Is Deep Learning - TL;DR

Deep learning is a subfield of machine learning.

It studies deep networks, a family of powerful and scalable models.

