DEEP LEARNING IN R

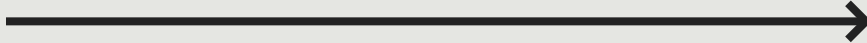SICSS-NDSU
https://slides.com/zoltanpm/sicss-ndsu-dl

OVERVIEW

ML ~ DL
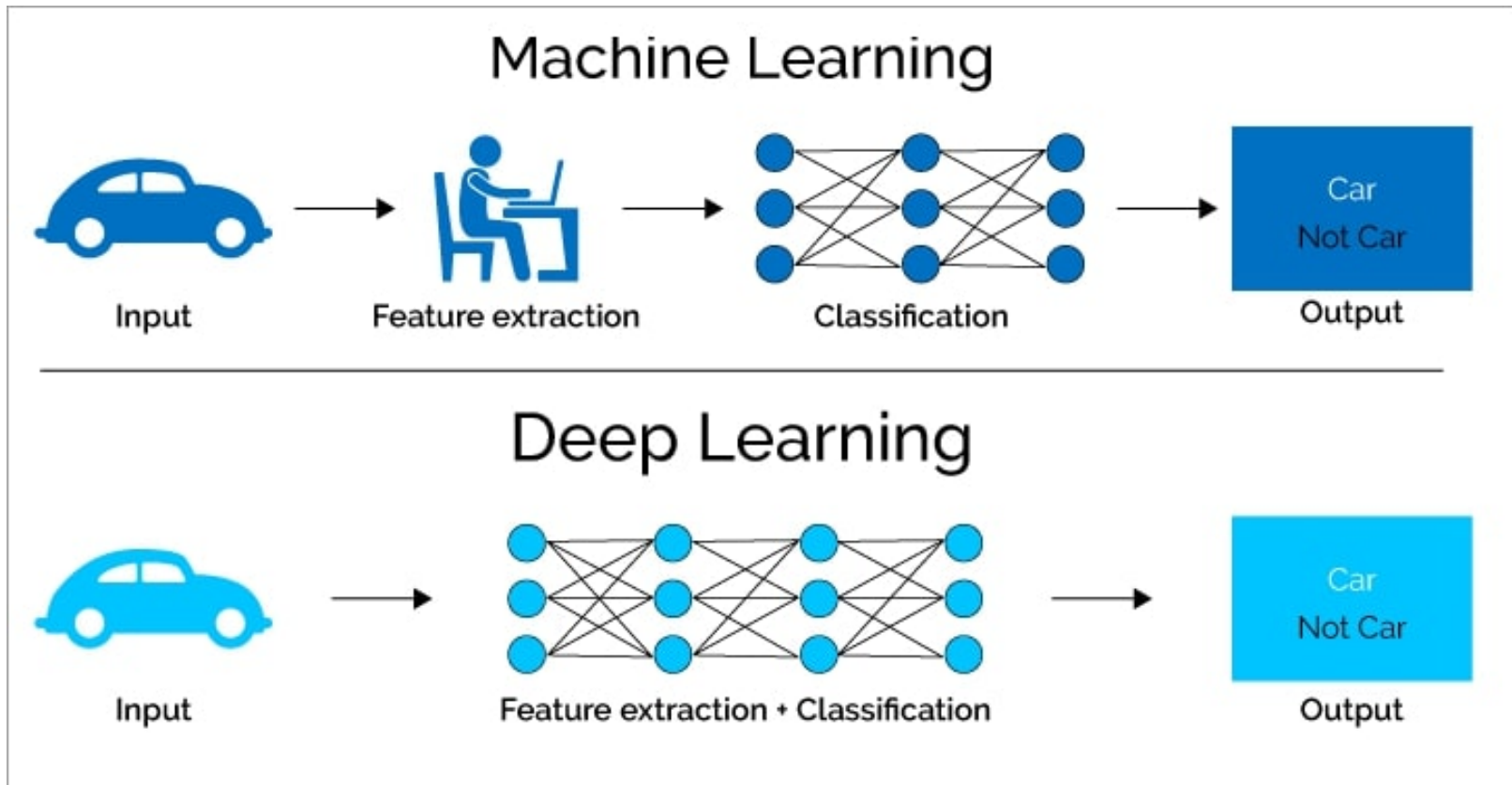
Coding steps

Data: pixels, embeddings

How it learns

"

ML: Machine learns from you.

DL: You learn from machine.

(... well, up to a point)
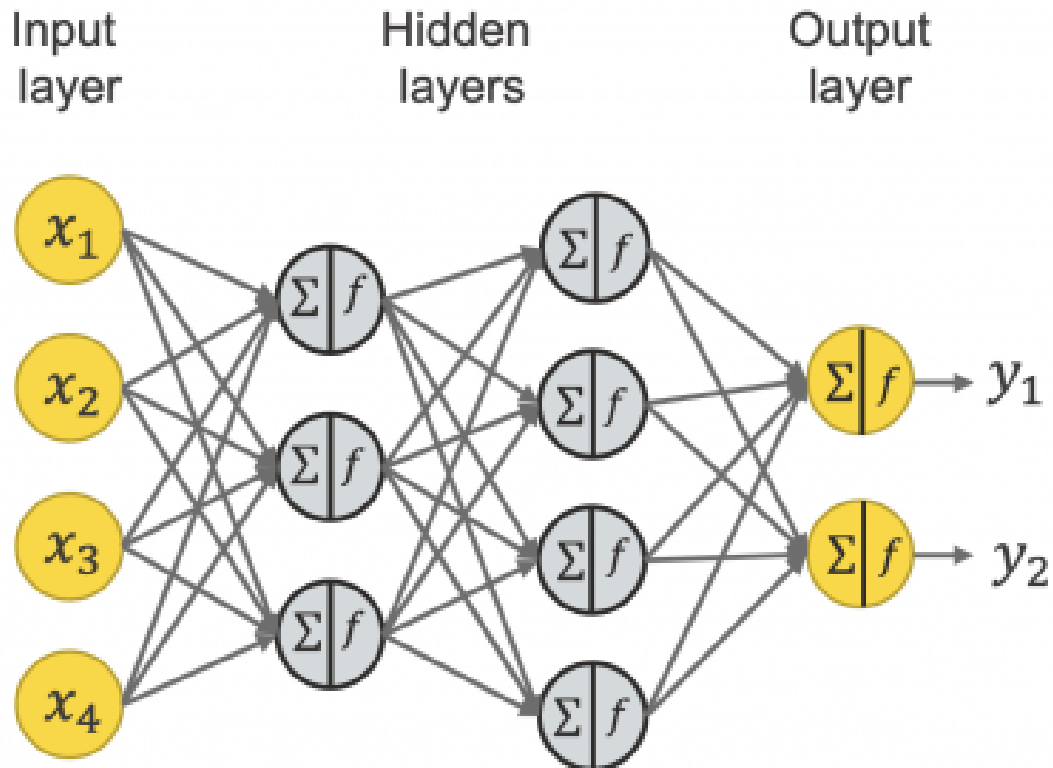
TOWARD DEEP LEARNING

TOWARD DEEP
LEARNING

" **Graham** and **Majdik** received stock options
from **Novartis**."

- Manual features?

- What else might machine-created features be?
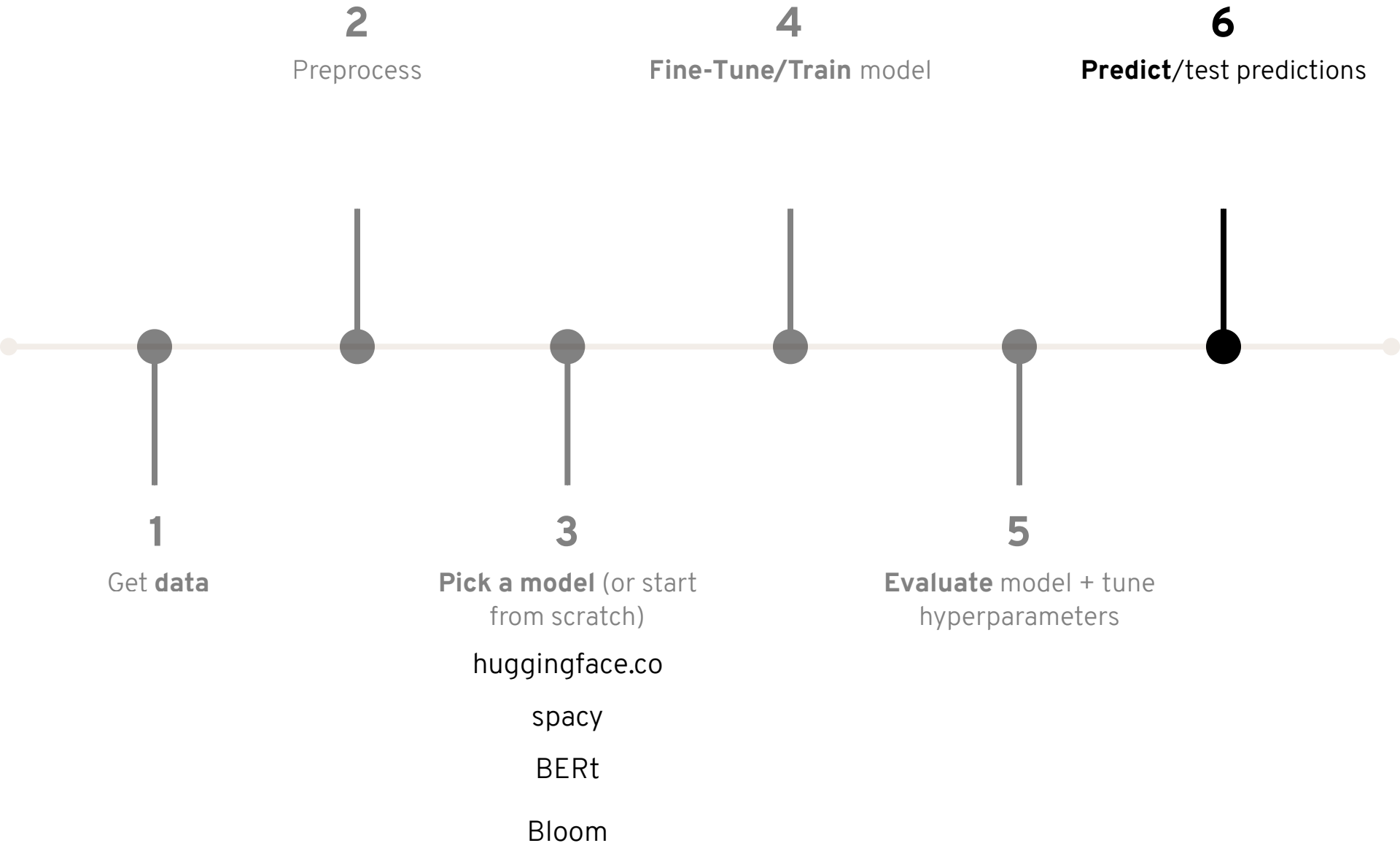
TOWARD DEEP LEARNING

STEPS

2
Preprocess

4
Fine-Tune/Train model

6
Predict/test predictions

1
Get **data**

3
Pick a model (or start
from scratch)

huggingface.co

spacy

BERt

Bloom

5
Evaluate model + tune
hyperparameters

NOT BINARY

Full Sentence Inputs	Feature Engineering	Majdik &Wynn 2022: Features for expertise class.?
computing-intensive	more efficient	
more variable	more intelligible	
easier	requires expertise	
removes judgment	requires judgment	

DATA AND FEATURES

Images	Words
pixels	BoW, sparse one-hot encodings, or dense *vector embeddings*
gray shade	n-dimensional
shapes	embed *meaning* in vector space
patterns	"dog" = [.3, .543, .112, … … … … .64]
?	?

HOW IT LEARNS

- Backpropagation
- Learning rate and gradient descent