30.10.23

OPENCAMPUS.sh

Machine Learning With TensorFlow

INTRODUCTION TO TENSORFLOW PART I

- Quiz
- Assignments
- Breakout Discussions
- Questions
- Project Examples

QUIZ

Introduction to TensorFlow Part I

https://forms.office.com/r/8WUugxmV3v

ASSIGNMENTS

ASSIGNMENTS: WHO WILL PRESENT NEXT?

BREAKOUT DISCUSSIONS

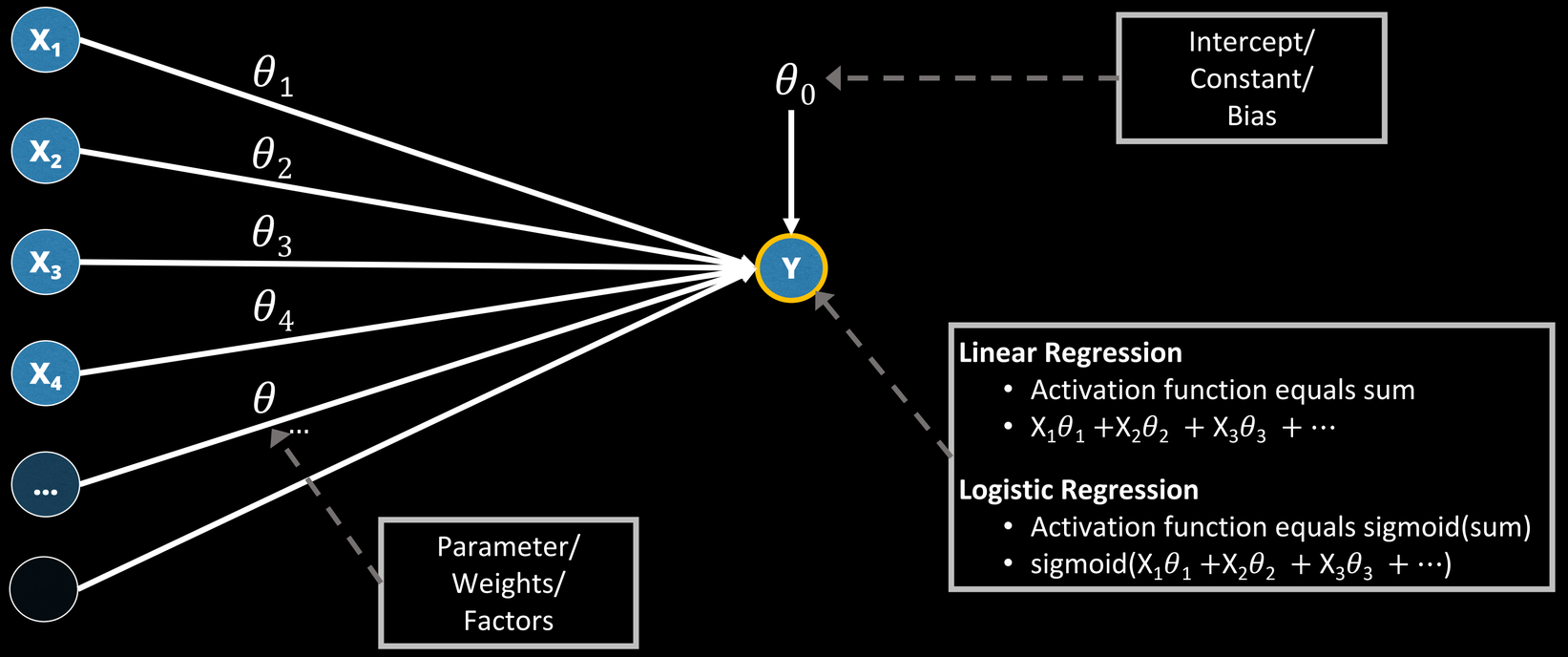
- Why is it usually beneficial to adjust the features and labels of the network to values between 0 and 1 or at least relatively close to zero?

- **What is the difference between the approach used in Exercise 1 and a linear regression?**

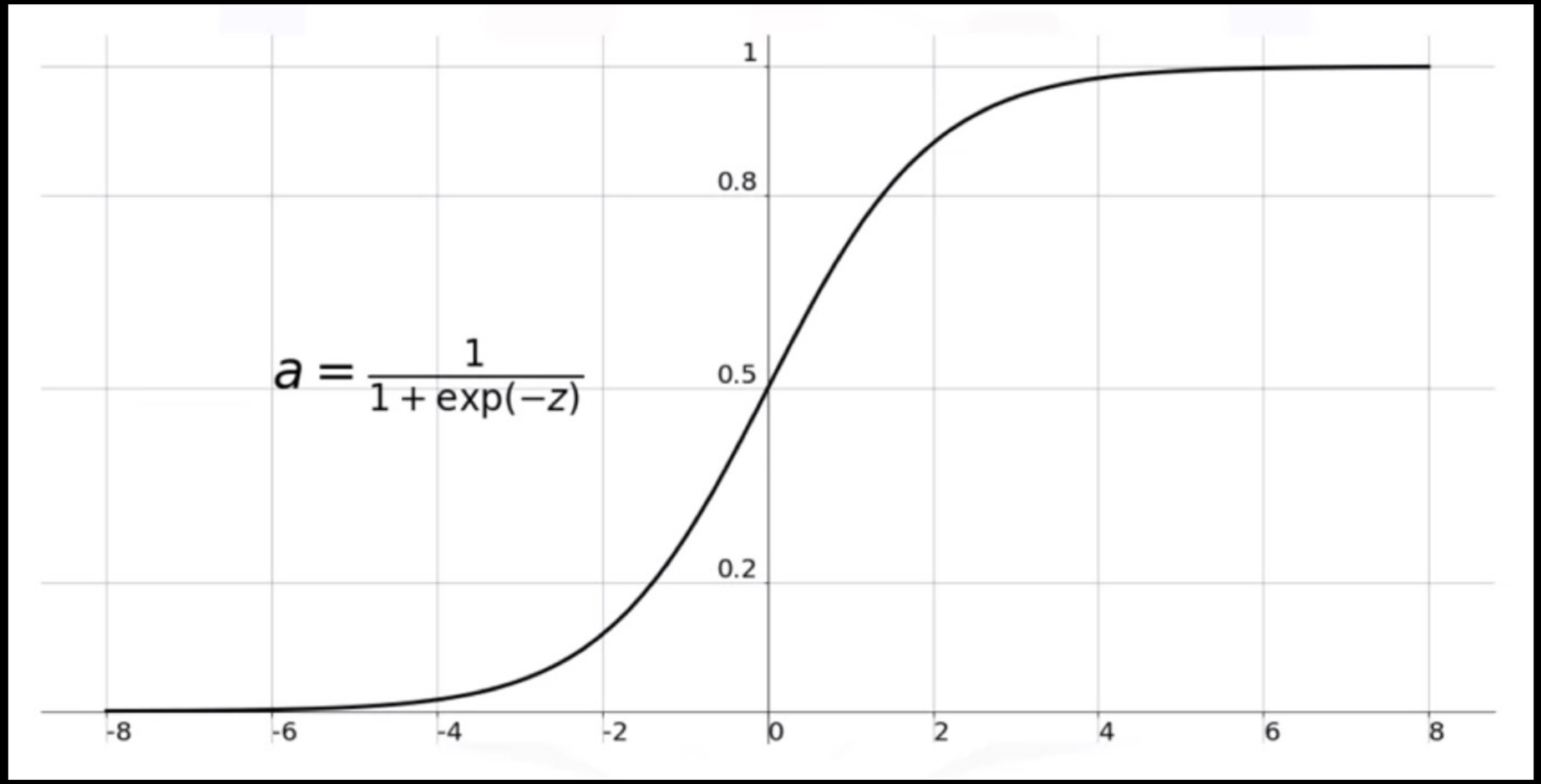
NEURAL NET VS. REGRESSION

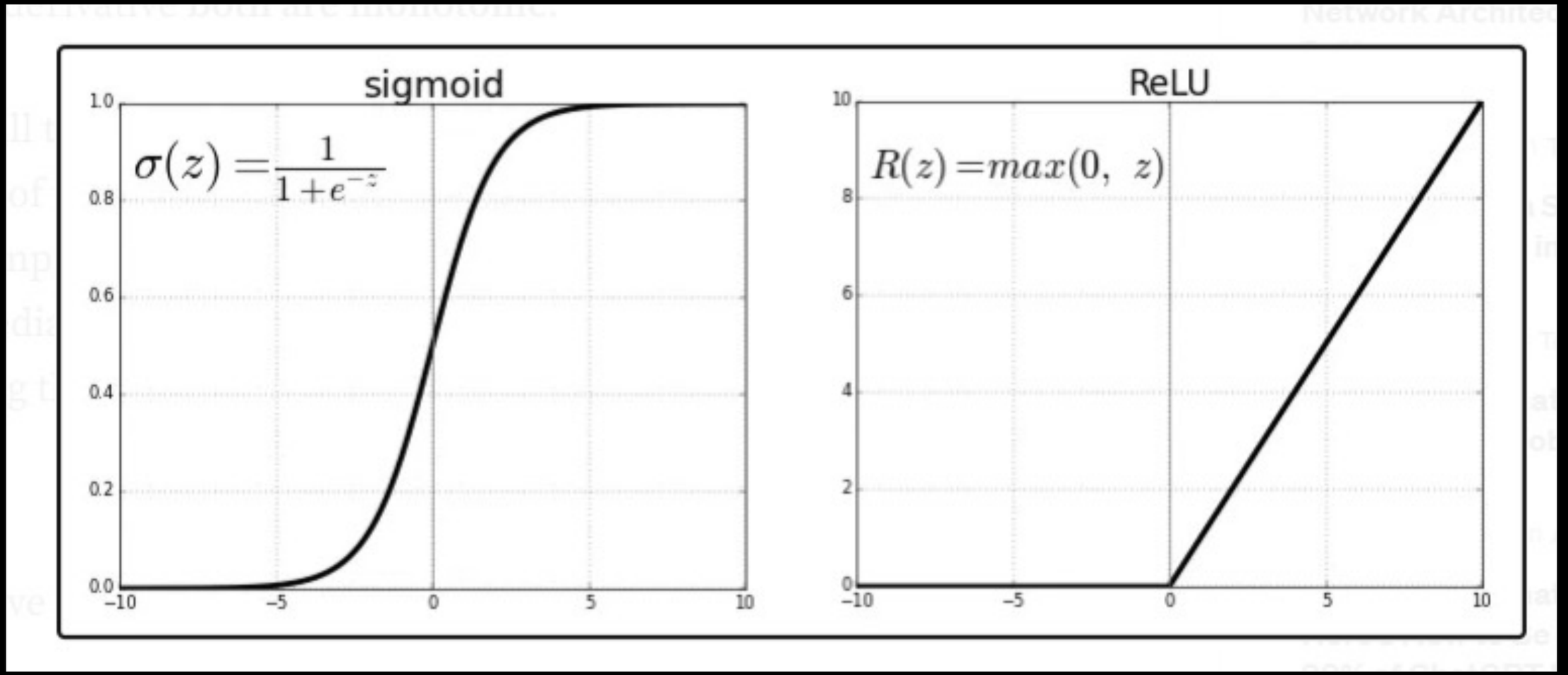
Input Layer
with input variables/ input features/ input dimensions

Output Layer
summarizing the thetas by applying an *„**activation function**“*



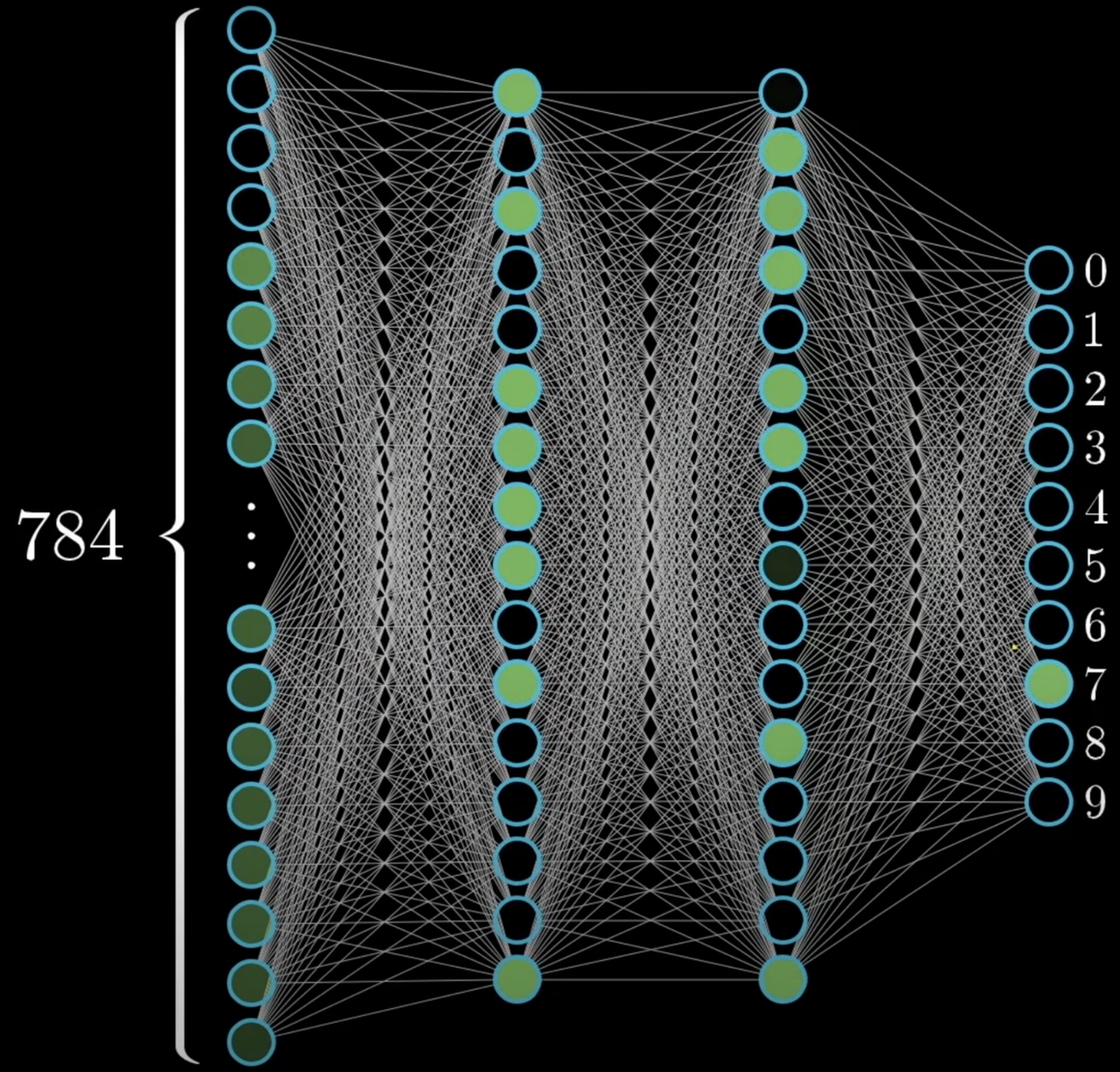
SIGMOID FUNCTION

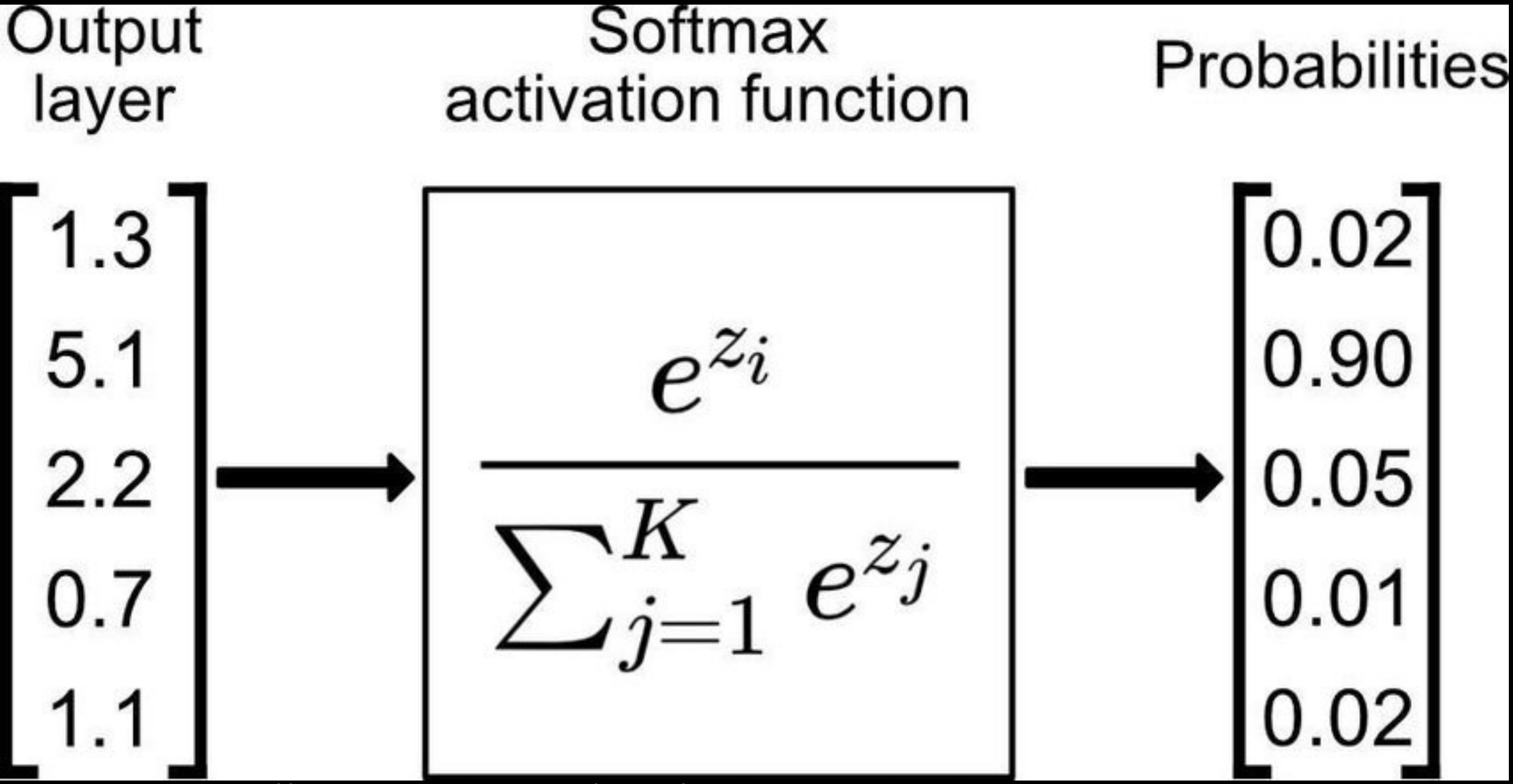




Source: https://towardsdatascience.com/activation-functions-neural-networks-1cbd9f8d91d6

NEURAL NET (MULTI LAYER PERCEPTRON)





Source: https://www.researchgate.net/figure/Working-principles-of-softmax-function_fig3_349662206

BREAKOUT DISCUSSIONS

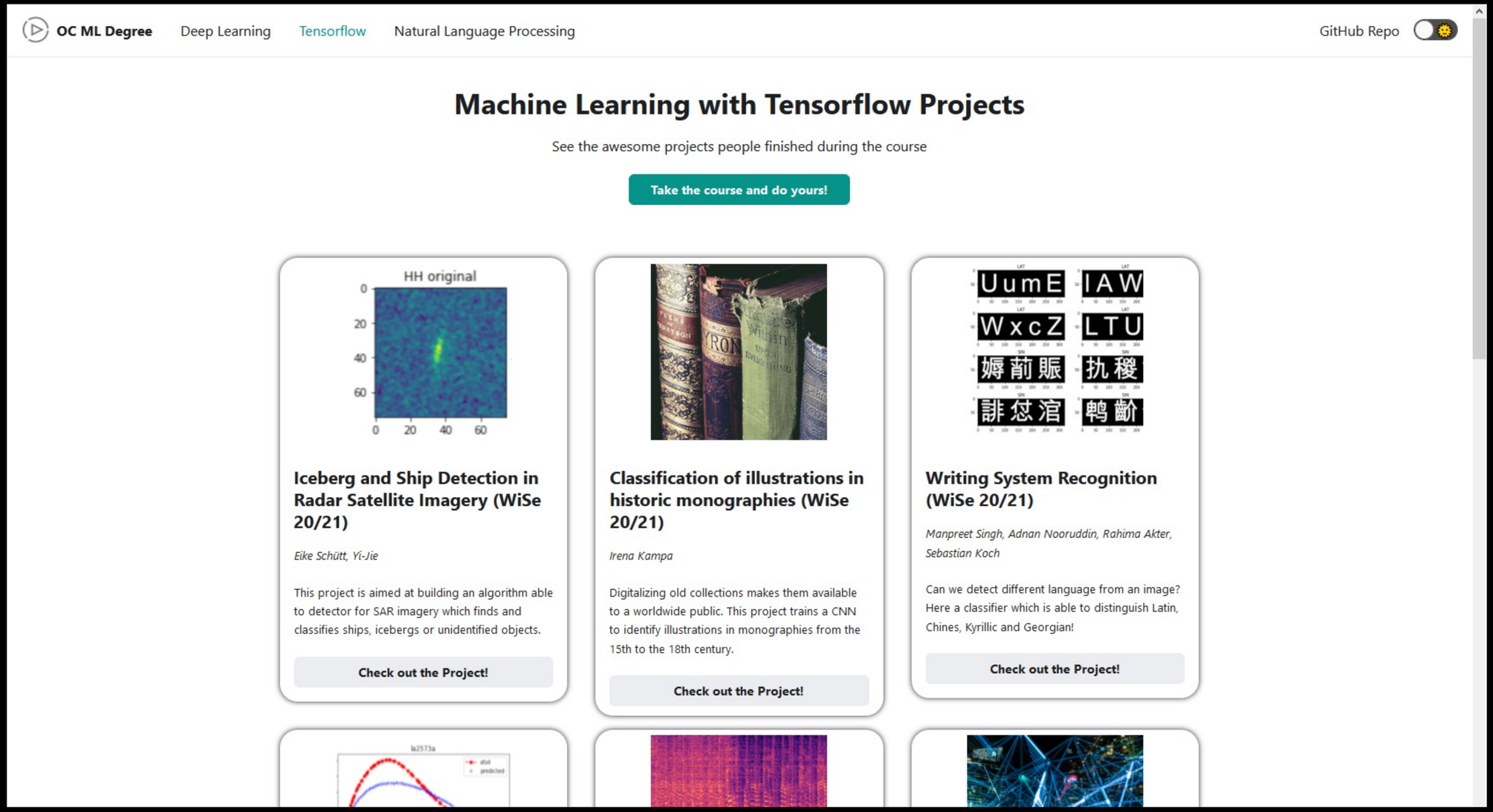
- Assume you have the labels 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 describing the age of a product in years and features like color, noise, and speed of the product (which change with the age).
  How would you define the output layer of your model?

QUESTIONS

PROJECT MILESTONES

- 06.11 Present your ideas
- 13.11 Form groups
- 20.11 Literature review
- 27.11 Dataset characteristics
- 04.12 Baseline model
- 11.12 Tensorboard
- 18.12 Model & model evaluation
- 08.01 & 15.01 Final presentation

PROJECT EXAMPLES



https://opencampus-sh.github.io/oc-ml-projects/

TASKS UNTIL NEXT WEEK

- Completion of the learning material of week 3 and 4 of the course "introduction to TensorFlow“
- Complete Exercises 3 and 4 from the course handbook
- Bring a first project idea!