

# Deakin **SIMPSONS** AI CHALLENGE 2021

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SCAN ME

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# The Simpsons



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Please note:  
This session is recorded



- What is the Deakin Simpsons Challenge 2021?
- About the task
- Timeline
- Eligibility
- Prizes and Sponsors
- Benefit
- How to participate?
- Questions

# What is the Deakin Simpsons Challenge 2021?



- A computer vision competition for recognizing Simpsons characters
- The challenge is designed to:
  - Provide the opportunity to work as team members
  - Compete against each other
  - Enhance your learning experience by improving their AI modeling, problem-solving, and team-working skills
- **Designed with the same norms as any challenge organized in a top-tier AI conference**

# What do you have to do?

## The machine learning framework

- Apply a prediction function to a feature representation of the image to get the desired output:

$f(\text{img of Homer Simpson}) = \text{"homer Simpsons"}$

$f(\text{img of Principal Skinner}) = \text{"principal skinner"}$

$f(\text{img of Moe Szyslak}) = \text{"Moe Szyslak"}$

# What do you have to do?

## The machine learning framework



$$y = f(x)$$

output      prediction function      Image feature

A diagram showing the equation  $y = f(x)$  in large blue font. Below the equation, three labels are positioned: "output" under the  $y$ , "prediction function" under the  $f$ , and "Image feature" under the  $x$ . Red arrows point from each label up to its corresponding part of the equation.

- **Training:** given a training set of labeled examples  $\{(x_1, y_1), \dots, (x_N, y_N)\}$ , estimate the prediction function  $f$  by minimizing the prediction error on the training set
- **Testing:** apply  $f$  to a **never seen before** test example  $x$  and output the prediction  $y = f(x)$

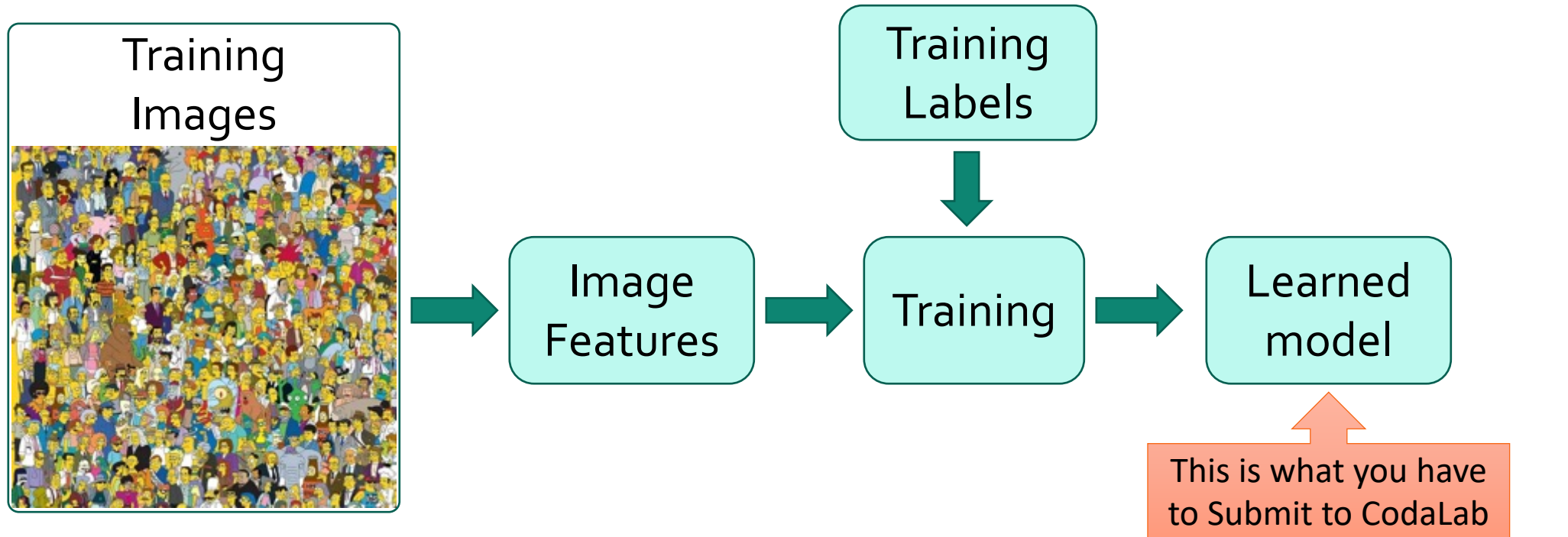
This is what CodaLab does!



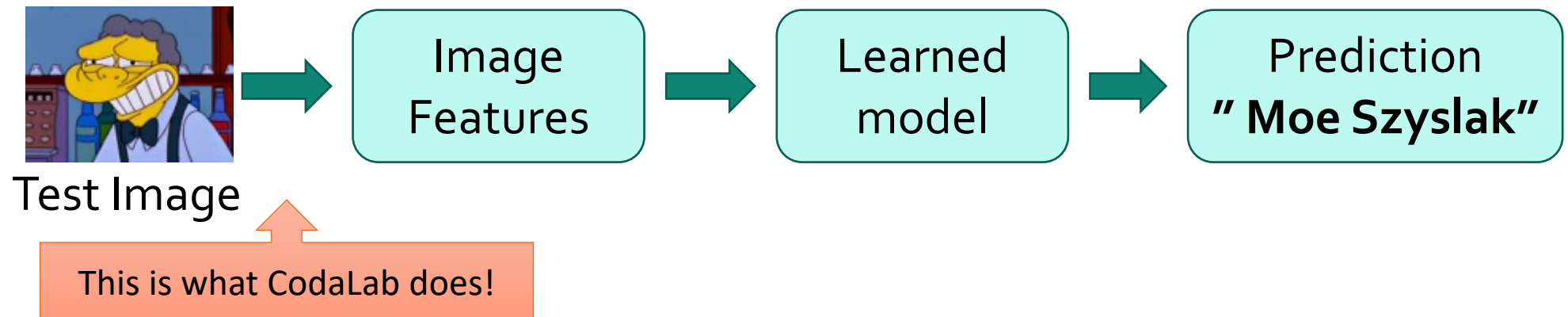
# What do you have to do?

## Steps

### Training



### Testing

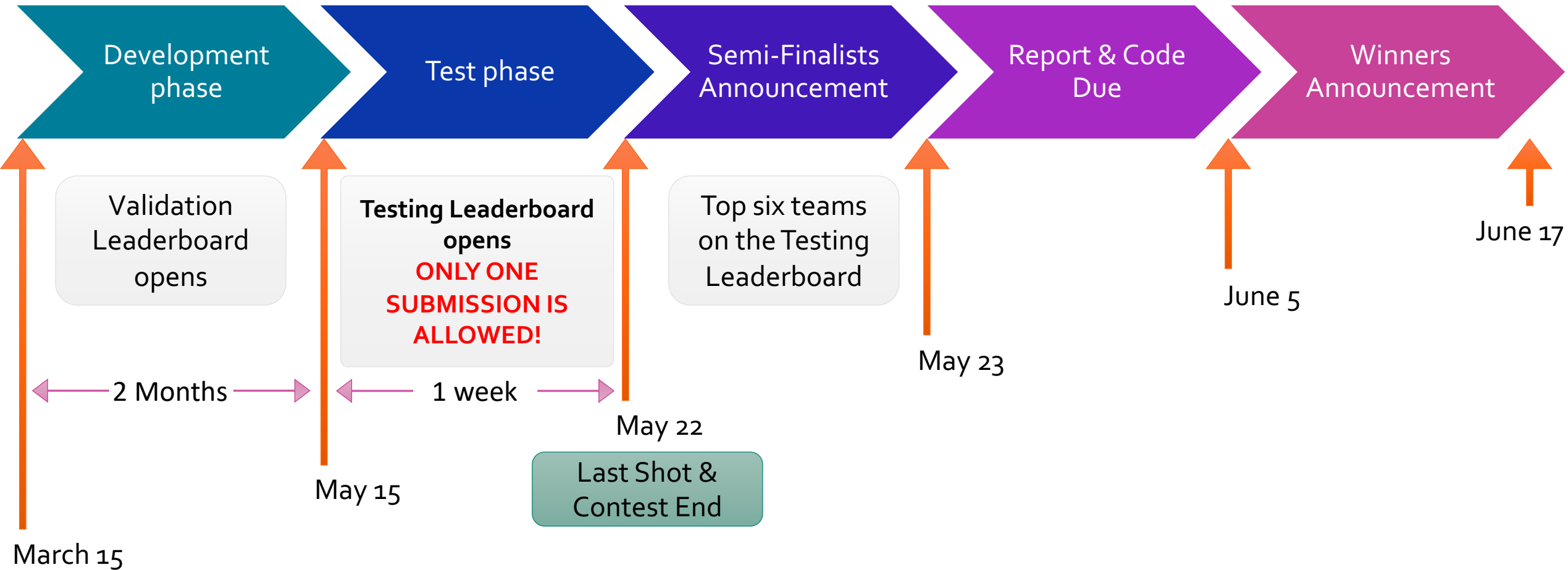


# The performance is evaluated using the Accuracy!

$$\text{Accuracy} = \frac{\text{\#correctly classified test images}}{\text{\#test images}}$$



# Timeline



- **Development phase**

- 20 characters x 50 images = 1,000 test images

- **Test phase**

- 20 characters x 50 images = 1,000 test images

- Images in the test sets are collected and labeled from TV show episodes

- Although images are different in each test test, they come from the same distribution

**You never have access  
to the images in the  
test sets!  
Only CodaLab does!**

- **All participants need to be enrolled in a course within the School of IT**
- The semi-finalists are required to:
  - Achieve at least **80%** accuracy for the test phase
  - Submit a report, which describes the solution
  - Provide a link of the Github repo of the solution
  - The submitted codes and reports may be inspected to check the validity of the solution!

# Prizes and Sponsors



Funded by  
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Deakin University  
School of Information  
Technology

Award for

1st Prize Winners of the Deakin  
**SIMPSONS** AI Challenge 2021

Presented to

**John Doe, Dale Nixon, and  
Karen Eliot**

in recognition for their excellent  
achievement

XX June 2021

Funded by Community Bank at Deakin  
University

  
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**deakin.edu.au**

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# Why should you participate?



- **The school official award that will be given to you provides an invaluable recognition for your achievement**
  - An award is critical when you apply for a job or a PhD scholarship!
- The perfect place to learn best practices in AI, accrue feedback on your work, and augment your skills
- A channel for problem-solving and brainstorming
- An opportunity to push boundaries and encourage creativity
- The experience you get is invaluable in preparing you to understand what goes into finding feasible solutions for big data

- Register to the CodaLab platform, then register to the competition on CodaLab
- **You can participate individually or in a team**
  - There cannot be more than 3 students in a team
  - To find team members or join a team, you can post a message on the discussion forum
  - Once you have built your team, the team leader needs to contact me and provides:
    - Names, CodaLab usernames, the Deakin course in which they are enrolled, and the name of the team

**All you need is a Google  
account to use Google Colab!**

# Demo



# **Wish you all the best!**

# **Questions?**