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# Learning the CIFAR-10 with CNN's

## Advanced Track Workshop #7

**FAQs from after the recording**:

tinyurl.com/pytorch-faq

Anonymous feedback: tinyurl.com/w21-atrack7-fb

GitHub: github.com/uclaacmai/advanced-track-winter21

# Today's Content

- Outline/goal for the project
    - A lot of the content from the PyTorch workshop can be used as a simplified template/guideline for this
- Start working on the project (with our help whenever necessary)
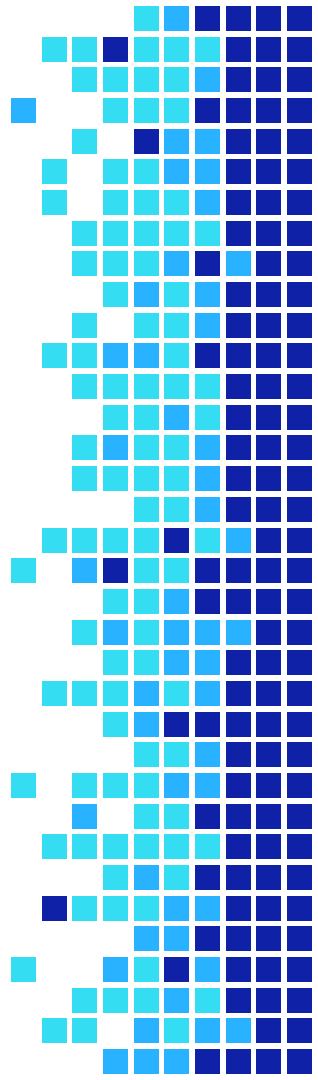
# Projects Application

Application: https://tinyurl.com/projects-s21

FAQ: https://tinyurl.com/projects-s21-faq

Cassava leaf disease classification
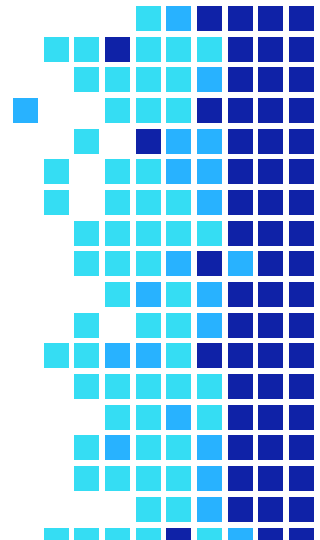
Matched sightings of Oscar (HW-MN0500658)
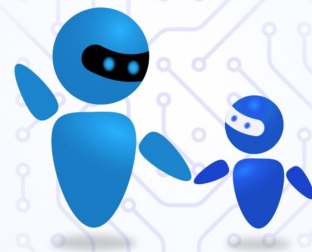
Humpback whale identification

# You Belong in AI! Podcast Season 2

- An ACM AI Outreach initiative
- In this series, we interview inspiring individuals in the AI community
- Emphasizing on the importance of representation and inclusion in AI
- It's on Spotify!
- Link: tinyurl.com/w21-atrack7-ubelonginai

**You Belong in AI!**
empowering figures in AI

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# The Project

- Your task is to train a CNN as a classifier for the CIFAR-10 dataset
- Create a Jupyter Notebook and run it in the conda environment you set up earlier
- A lot of what you'll be writing will be similar to the code snips in the PyTorch workshop
  - One approach would be to think about what you have to change from the PyTorch code to adapt it to this project

# Documentation

- PyTorch documentation is going to be your friend for this project
- Any theoretical concept that we have learned this quarter can almost certainly be implemented in PyTorch… just read the documentation to understand the syntax
- PyTorch docs: https://pytorch.org/docs/stable/index.html

# Documentation (cont.)

- [PyTorch documentation — PyTorch 1.6.0 documentation](#)

- Helpful pages to get started:
  - [Conv2d — PyTorch 1.7.1 documentation](#)
  - [MaxPool2d — PyTorch 1.7.1 documentation](#)
  - [Linear — PyTorch 1.7.1 documentation](#)
  - [torch.nn.functional — PyTorch 1.7.1 documentation](#)
  - [torch.utils.data — PyTorch 1.7.1 documentation](#)

# CIFAR-10

- The dataset consists of 60,000 color images split between 10 classes
    - Examples of classes include: Truck, Horse
- Download is available as part of a built in with PyTorch
    - [torchvision.datasets — PyTorch 1.7.1 documentation](#)

Learning Multiple Layers of Features from Tiny Images, Alex Krizhevsky, 2009.

# You got this!

- The instructors aren't going to do much :))
- ... jk
- We're going to give you a skeleton
- And pretty much leave you to it
- We've put a **rough** estimate of how long each cell should take to code up after which we will give you the answer to make sure that everyone makes progress.
- This workshop is meant to be very interactive so feel free to ask specific doubts about your code while you work.
- We're going to set up a 'Questions' breakout room that you can ask to join in case you want to share screen or talk to us privately about your code

# Where to get started:

1. Review the CNN and PyTorch workshops - the PyTorch workshop is a great template for a general project
2. Check out the PyTorch Docs
3. ASK US QUESTIONS!!

Skeleton code: tinyurl.com/w21-atrack7-skeleton

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"
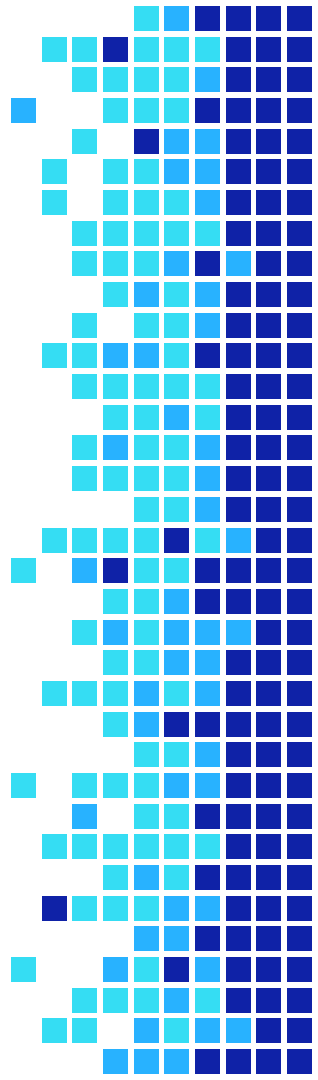
*Questions?*

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# Thank you for coming!

Anonymous Feedback: tinyurl.com/w21-atrack7-fb
Office Hours: Thursdays 9pm on the AI channel on the ACM Discord -
right after this workshop
Facebook Group: www.facebook.com/groups/uclaacmai/