

# Guided Project

## Advanced Track Workshop #8

Anonymous Feedback: [tinyurl.com/w21-atrack8-fb](https://tinyurl.com/w21-atrack8-fb)

GitHub: [github.com/uclaacmai/advanced-track-winter21](https://github.com/uclaacmai/advanced-track-winter21)

Attendance Code: luge

# Projects Application

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

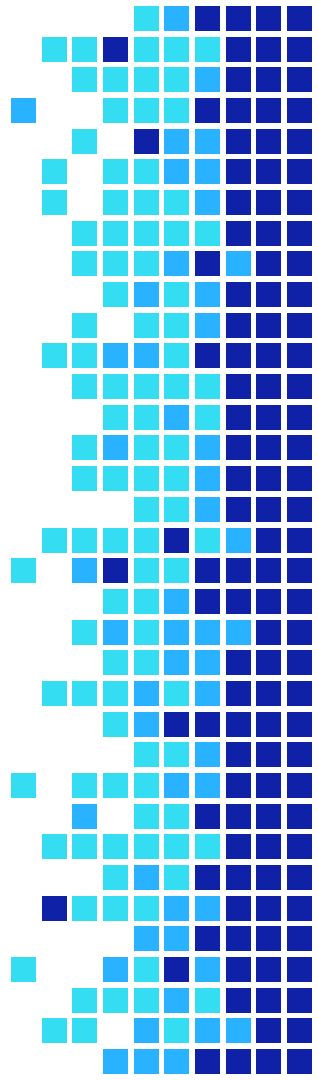
FAQ: <https://tinyurl.com/projects-s21-faq>



Cassava leaf disease classification



Humpback whale identification



# Today's Content

- Last time we started working on a project to build a classifier for the CIFAR-10 dataset using a CNN.
- We started off with a skeleton notebook and ended the workshop having defined our model
- The next steps are to create the training and testing routines and iteratively improve our models

# 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](#)



# The Project

- You can find the original skeleton notebook [here](#)
- Hopefully those of you who attended last time have your partially (or completely!) filled out notebooks.
- For everyone else, we'll briefly go over what we implemented last time and you can start off with the partially filled notebook [here](#)

## Documentation (cont.)

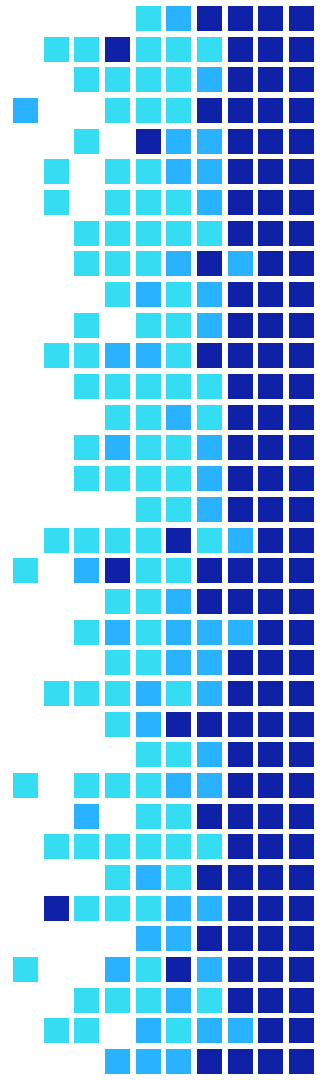
- PyTorch documentation is going to be your friend for this project
- [PyTorch documentation — PyTorch 1.7.1 documentation](#)
- Helpful pages to get started:
  - [Conv2d — PyTorch 1.7.1 documentation](#)
  - [MaxPool2d — PyTorch 1.7.1 documentation](#)
  - [Linear — PyTorch 1.7.1 documentation](#)
  - [torch.nn.functional — PyTorch 1.7.1 documentation](#)
  - [torch.utils.data — PyTorch 1.7.1 documentation](#)

## Questions breakout room

- We're going to create a 'Questions' breakout room along with the main room.
- If you have any doubts you want to keep private or want to share your screen, just message one of us and we can hop into the room with you and help you out

# Getting started

- Where to get started:
  - a. Start with the [original](#) skeleton notebook or [partially filled](#) notebook
  - b. Review the [CNN](#) and [PyTorch](#) workshops
  - c. Check out the [PyTorch Docs](#)
  - d. Ask us questions!





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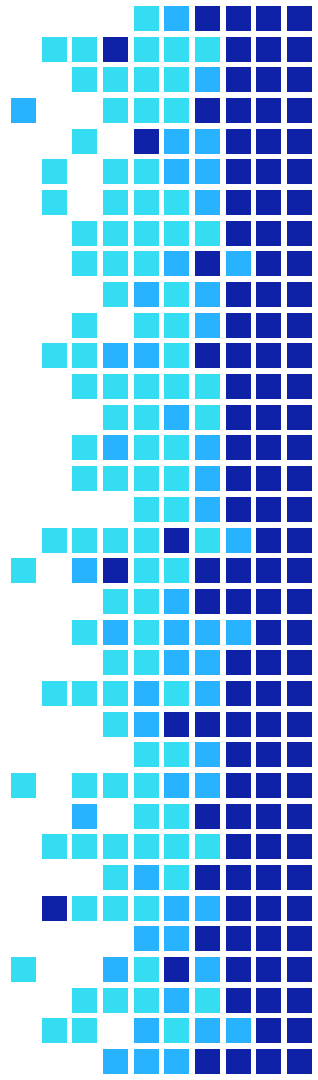
*Questions?*

# That's the end of Advanced Track!!

Stuff we've covered:

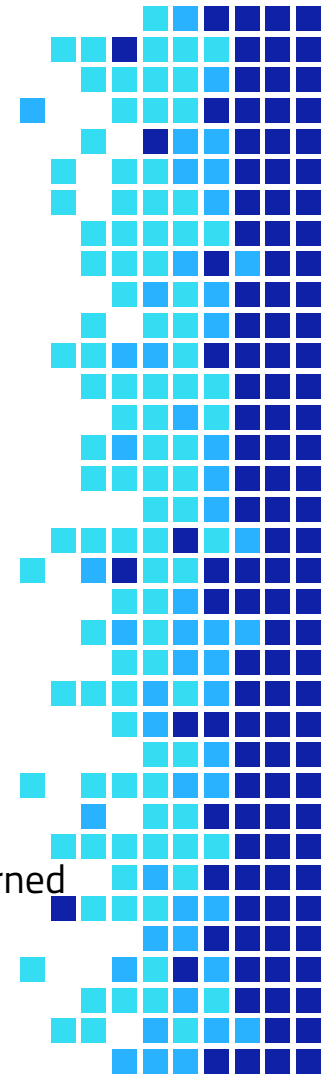
- Feed Forward Neural Networks
  - Theory and implementation
- Backpropagation
- Convolutional Neural Networks
  - Theory and implementation
- RNN's and LSTM's
- Anaconda
- PyTorch

Congrats on making it to the end!



# What's next?

- Explore some stuff on your own!
  - [Medium](#) is your friend
- Topics to look into:
  - Regularization - L1, L2, Dropout
  - Batch Normalization
  - ADAM
  - Transformers
  - GAN's
  - Reinforcement Learning
  - Autoencoders
  - Unsupervised Learning
- Check out ACM AI's Advanced++ workshop series!
- Sign up for the Projects team!! It's a fantastic way to apply all the stuff you just learned to a real-world problem!



# Thank you all for a great quarter!

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Facebook Group: [www.facebook.com/groups/uclaacmai/](https://www.facebook.com/groups/uclaacmai/)