

Fastai Study Group



Cleveland AI Group (CAIG)
October 15, 2018 - Week 3

Event Hosts



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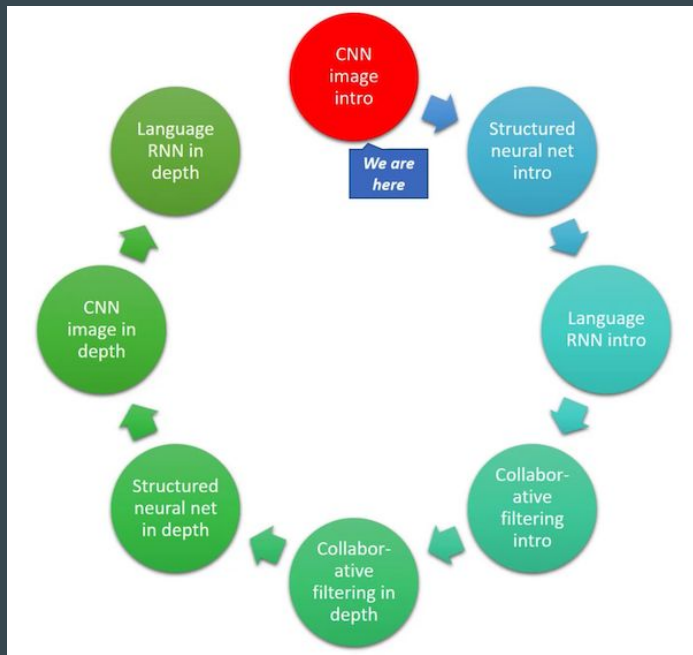
Michał Wojczulis
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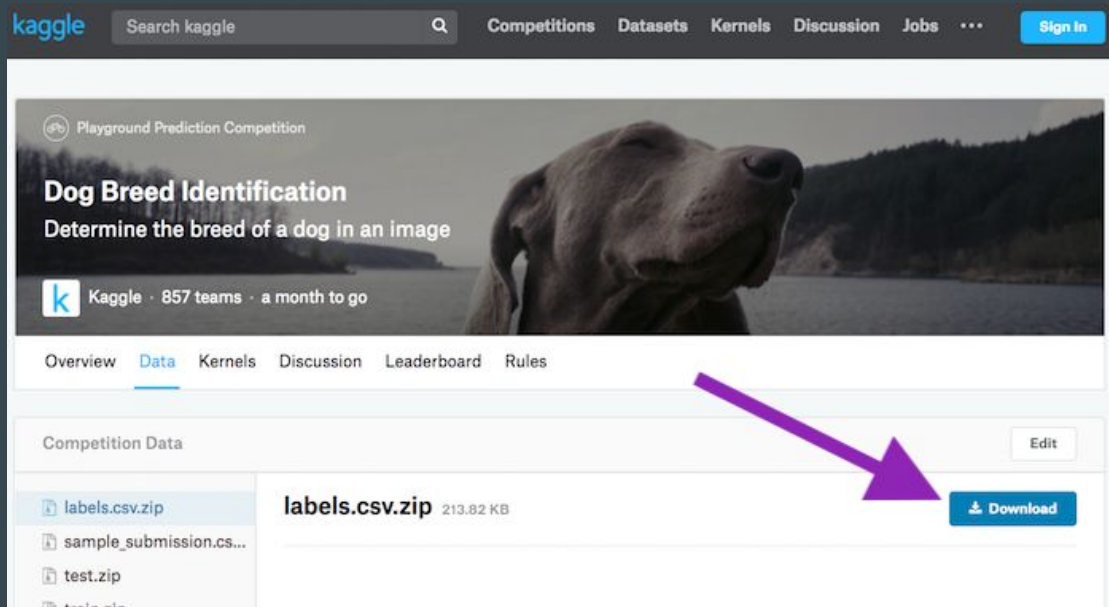
Agenda

- Lesson 3 key concepts
 - Cats vs Dogs
 - Visualization of CNNs
 - Jeremy's Excel Sheets
 - Softmax vs Sigmoid
 - Multi-label Classification
 - Intro to Structured vs Unstructured data
- Discussion/questions



Cats vs Dogs Continued

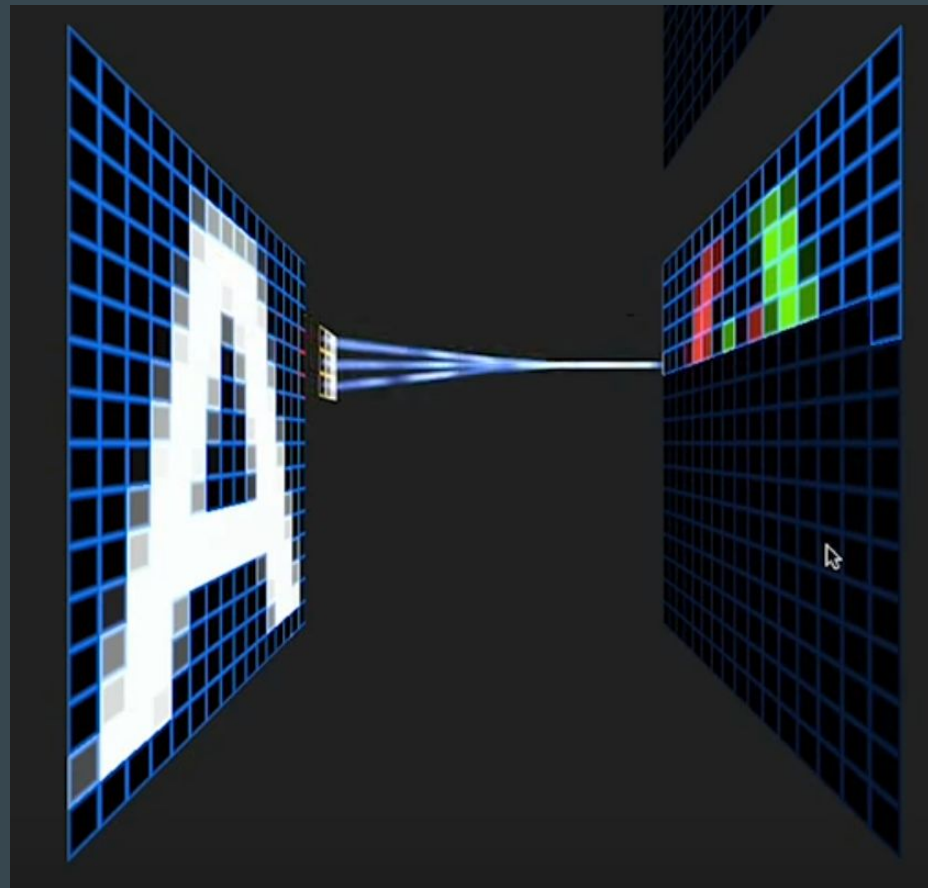
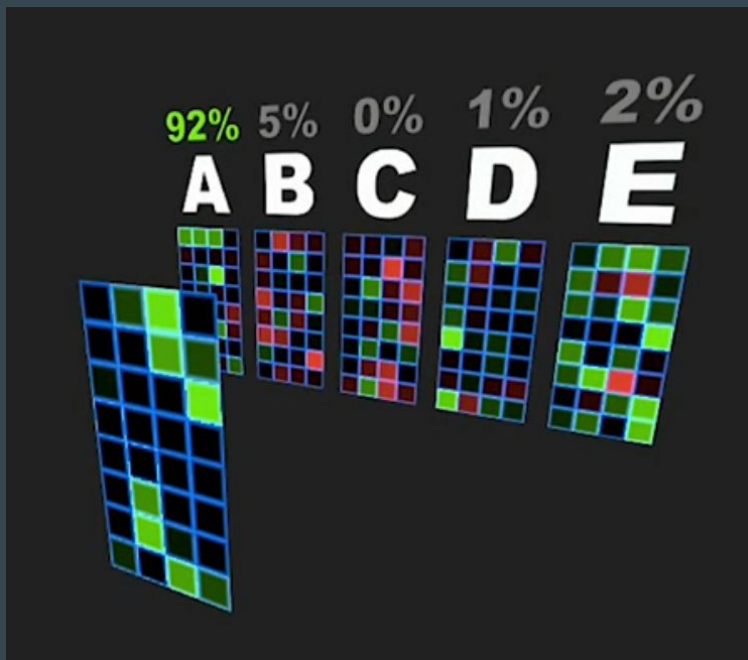
- How to get state of the art results
- Dog Breeds Competition
- Other Frameworks
 - Keras
 - Tensorflow
 - Pytorch



The screenshot shows the Kaggle website interface for the 'Dog Breed Identification' competition. The header includes the Kaggle logo, a search bar, and navigation links for Competitions, Datasets, Kernels, Discussion, Jobs, and a Sign in button. The competition banner features a close-up of a dog's face and the text 'Dog Breed Identification: Determine the breed of a dog in an image'. Below the banner, there are tabs for Overview, Data, Kernels, Discussion, Leaderboard, and Rules. The 'Data' tab is selected, showing a list of competition data files: 'labels.csv.zip' (213.82 KB), 'sample_submission.cs...', 'test.zip', and 'train.zip'. A purple arrow points to the 'Download' button next to the 'labels.csv.zip' file.

Visualization of CNNs

https://youtu.be/Oqm9vsf_hvU?t=283



Jeremy's Excel Spreadsheet

- MNIST
- Activation
- Rectified Linear Unit (ReLU)
- Filter/Kernel
- Tensor
- Max pooling
- Fully connected layer

[illegible]

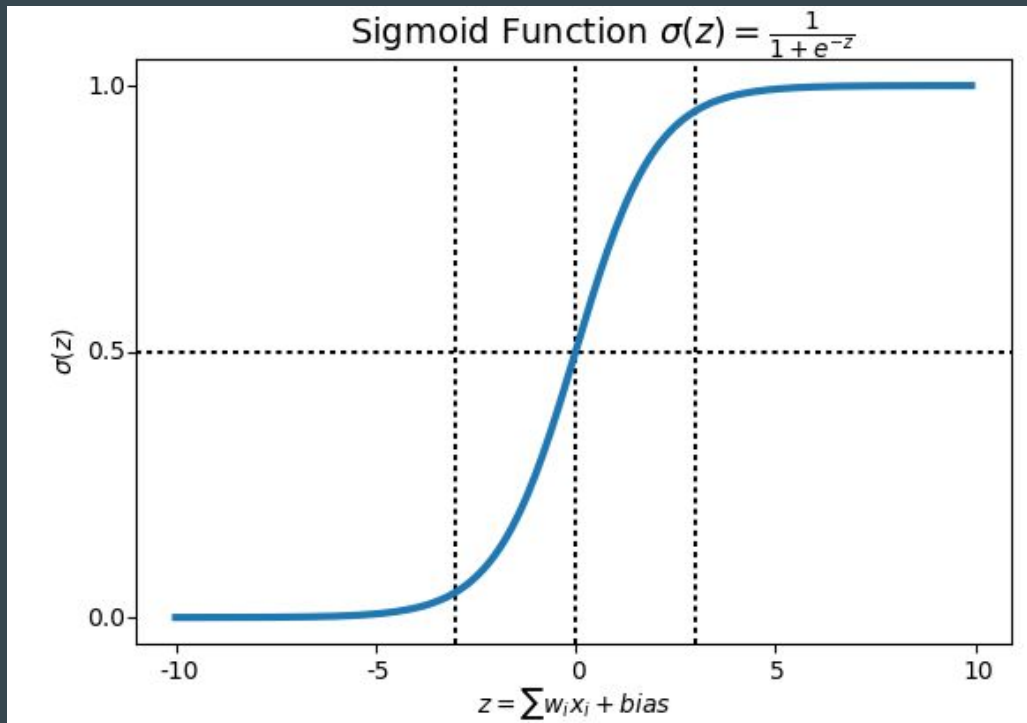
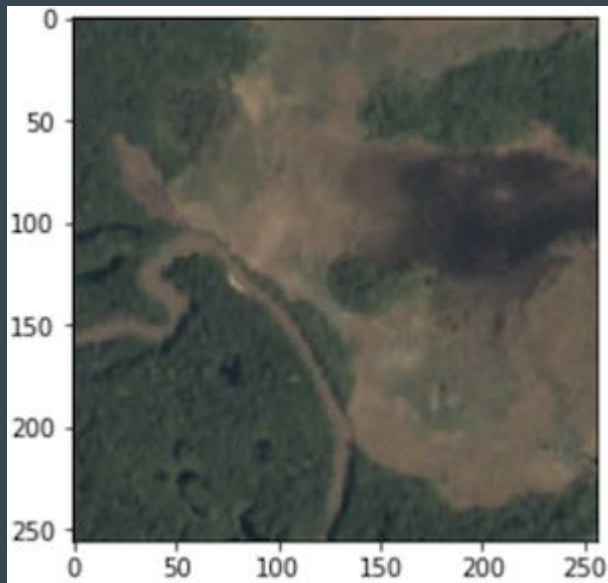
Softmax

- Single label classification
- Sums to 1
- Values tend to favor one label

	A	B	C	D	
1		output	exp	softmax	
2	cat	-1.83	0.16	0.00	
3	dog	2.85	17.25	0.09	
4	plane	3.86	47.54	0.26	
5	fish	4.08	59.03	0.32	
6	building	4.07	58.78	0.32	
7			182.75	1.00	

Multi-label Classification

- Planets dataset



Unstructured vs Structured Data

- Unstructured
 - Images
 - Audio
 - Natural Language Processing (NLP)
- Structured
 - Profit and Loss Statement
 - Databases
 - Rossmann Store Sales - from CSV

Resources

- Wiki lesson 3 <http://forums.fast.ai/t/wiki-lesson-3/9401>
- Lesson 3 notes [Link](#)
- Course page <http://course.fast.ai/>
- Course forums <http://forums.fast.ai/>
- Cleveland Tech Slack <https://cleveland-tech.herokuapp.com/>
 - Join #deep_learning channel
 - Ask questions or share articles
- AI Saturdays <https://nurture.ai/ai-saturdays>
- AI Saturdays guide [Link](#)
- AI Saturdays forums <https://ai6forums.nurture.ai/>
- CAIG Website <https://clevelandaigroup.github.io/>

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Questions?