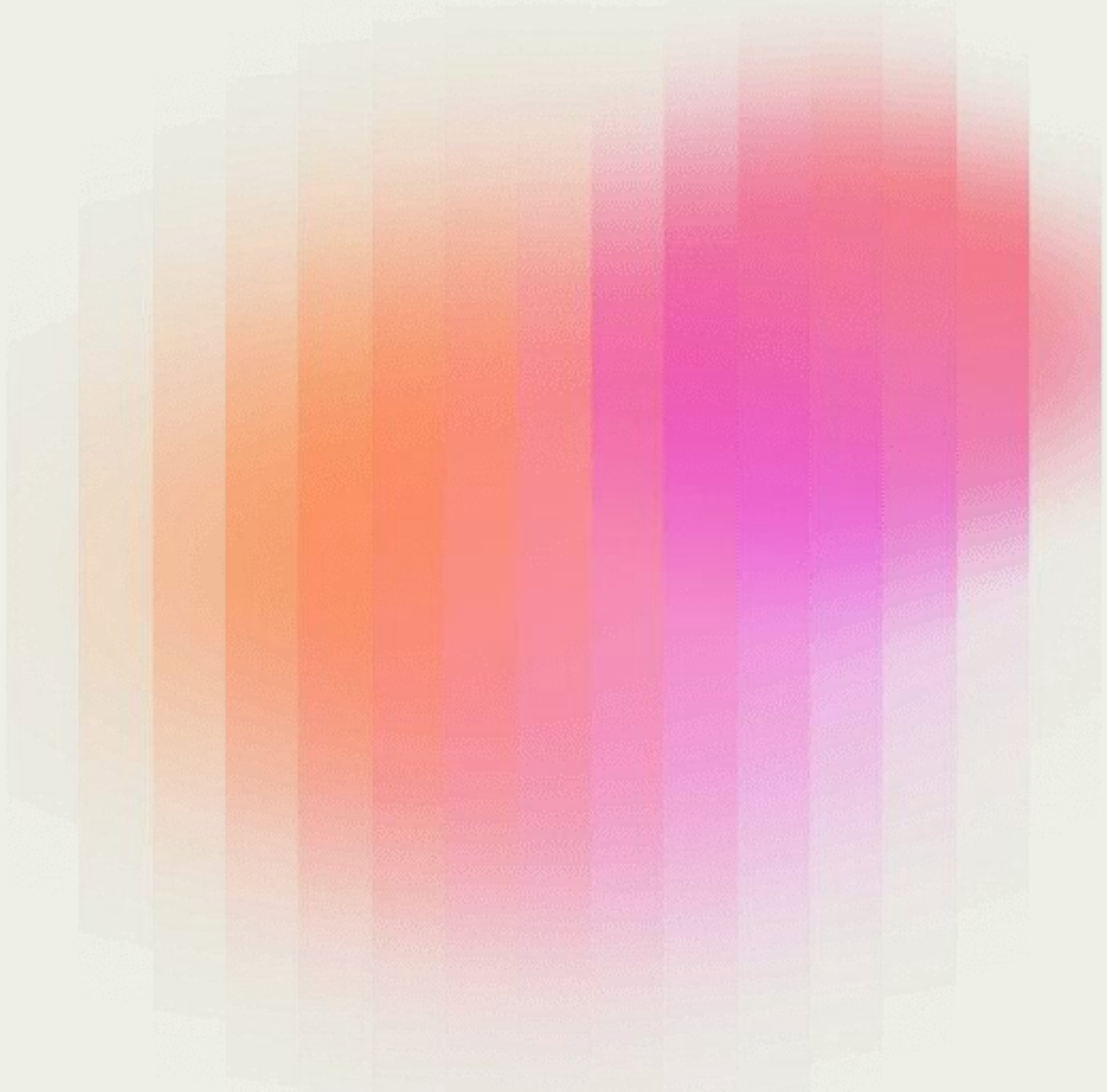
Week 1

Valerie Lopez



About Me

Computer Science Major

University of Central Florida – Senior

Interests: AI in Education, Ethical AI



Computer Science

- Algorithms for Machine Learning
- Robot Vision
- Ethics in Science & Tech

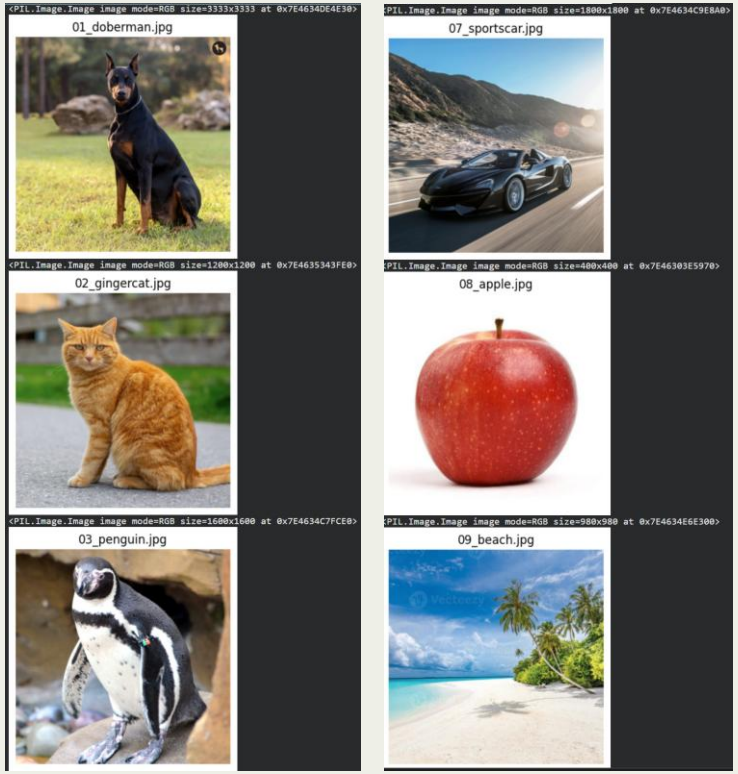
Mathematics

- Calculus I, II, III
- Differential Equations
- Discrete Math

Fun Fact: I’m on a salsa performance team!

Assignment 1

Goal: Using **Vision Transformer Base Model** to classify 10 images



results.csv

1 to 10 of 10 entries Filter

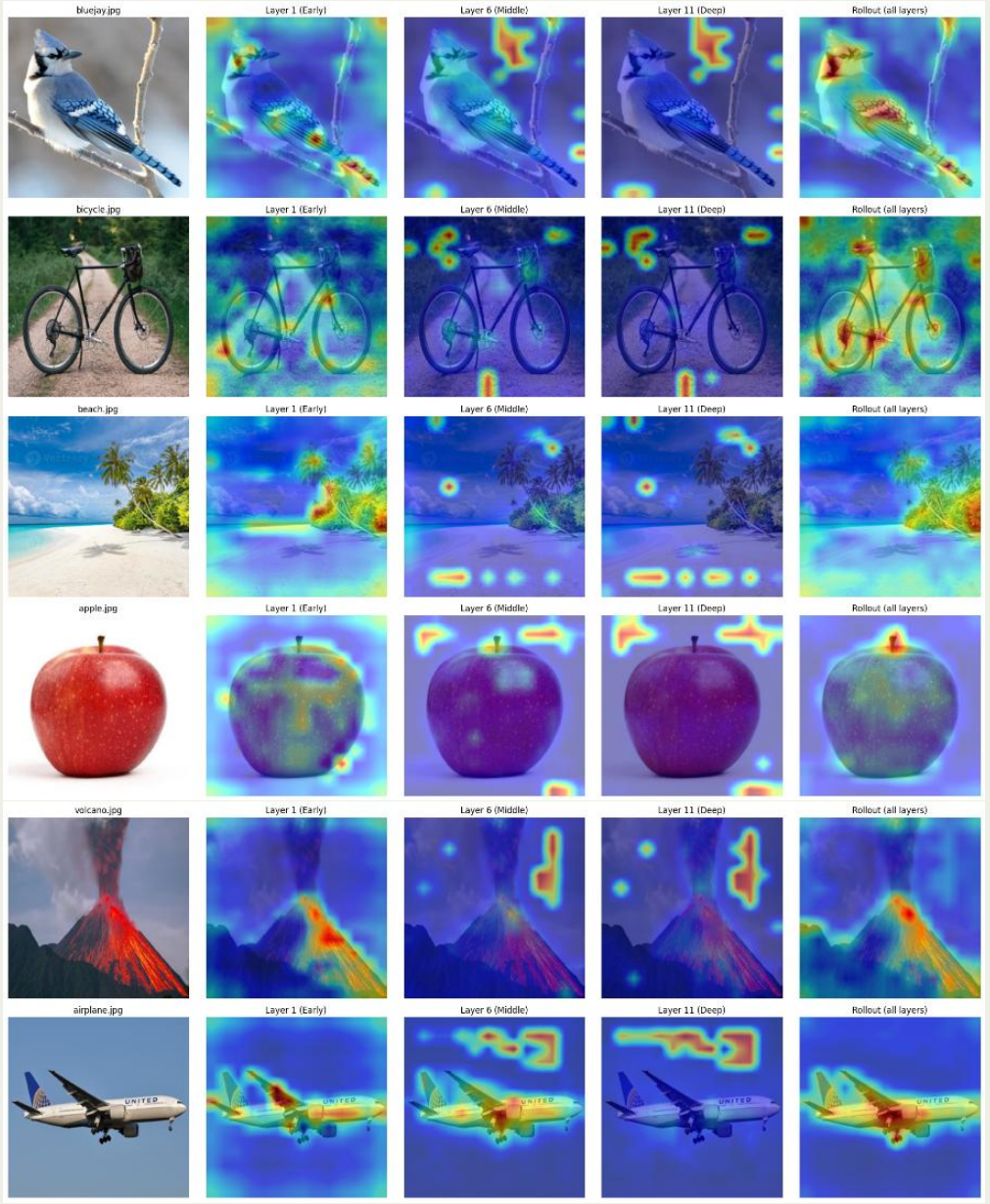
#	File	Top-1(conf.)	Top-2(conf.)	Top-3(conf.)
1	doberman.jpg	Doberman, Doberman pinscher (99.18%)	Rottweiler (0.14%)	kelpie (0.09%)
2	gingercat.jpg	tiger cat (76.95%)	tabby, tabby cat (17.61%)	Egyptian cat (4.03%)
3	penguin.jpg	king penguin, Aptenodytes patagonica (91.54%)	pelican (0.30%)	sea lion (0.24%)
4	bluejay.jpg	jay (99.11%)	brambling, Fringilla montifringilla (0.11%)	indigo bunting, indigo finch, indigo bird, Passerina cyanea (0.06%)
5	bicycle.jpg	torch (39.59%)	mountain bike, all-terrain bike, off-roader (30.86%)	tricycle, trike, velocipede (3.26%)
6	beach.jpg	sandbar, sand bar (60.81%)	seashore, coast, seacoast, sea-coast (34.46%)	sarong (0.73%)
7	apple.jpg	Granny Smith (89.22%)	banana (0.77%)	strawberry (0.63%)
8	sportscar.jpg	sports car, sport car (64.17%)	convertible (30.56%)	racer, race car, racing car (1.89%)
9	volcano.jpg	volcano (99.98%)	geyser (0.00%)	cheetah, chetah, Acinonyx jubatus (0.00%)
10	airplane.jpg	airliner (99.58%)	wing (0.15%)	warplane, military plane (0.07%)

Show 10 per page

Attention Maps

How can attention maps explain the model's predictions?

- Visualizing change in attention through layers
- Class differences
- Register-Token Phenomenon

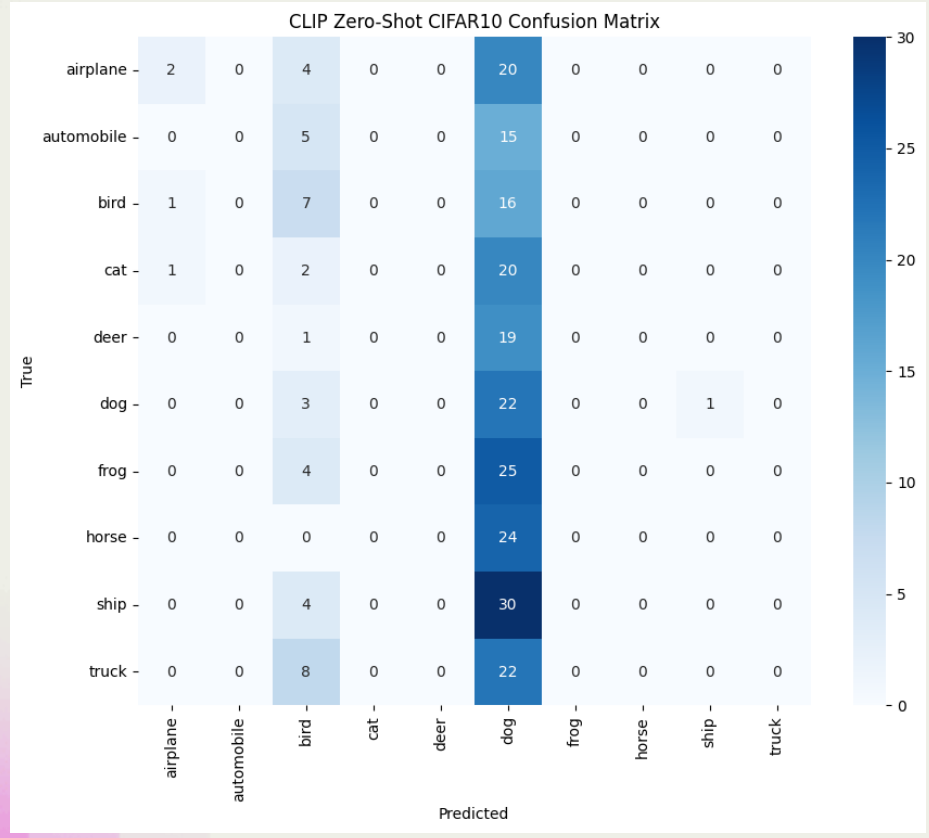


Assignment 2

Goal: Performing **Zero-Shot Classification** with **CLIP** on **CIFAR-10**

- Loading CIFAR-10 dataset
- Defining text prompts
- Collecting probabilities

Problem: Strong values in dog column indicate wrong predictions



Upcoming Week

- Continue CLIP research
- Debug classification matrix
- Check accuracy
- Analyze misclassifications

Thank You

