Week 1 Presentation



Jack Lamberg

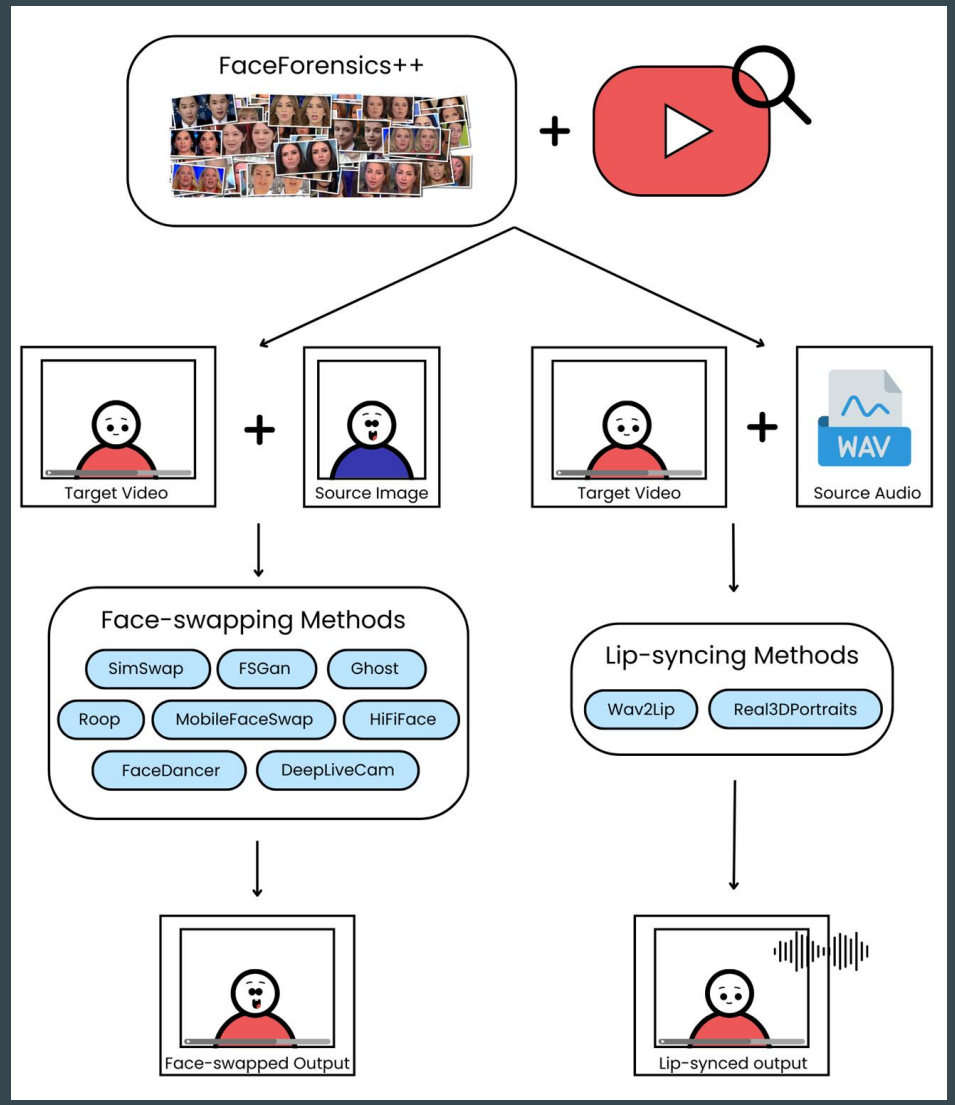
About Me

- Computer Science and Math Double Major
- Strong research background
  - “Towards Creating a Comprehensive Deepfake Dataset”
  - Betti Number Research
- D1 and D2 athlete for Bowling and Spikeball





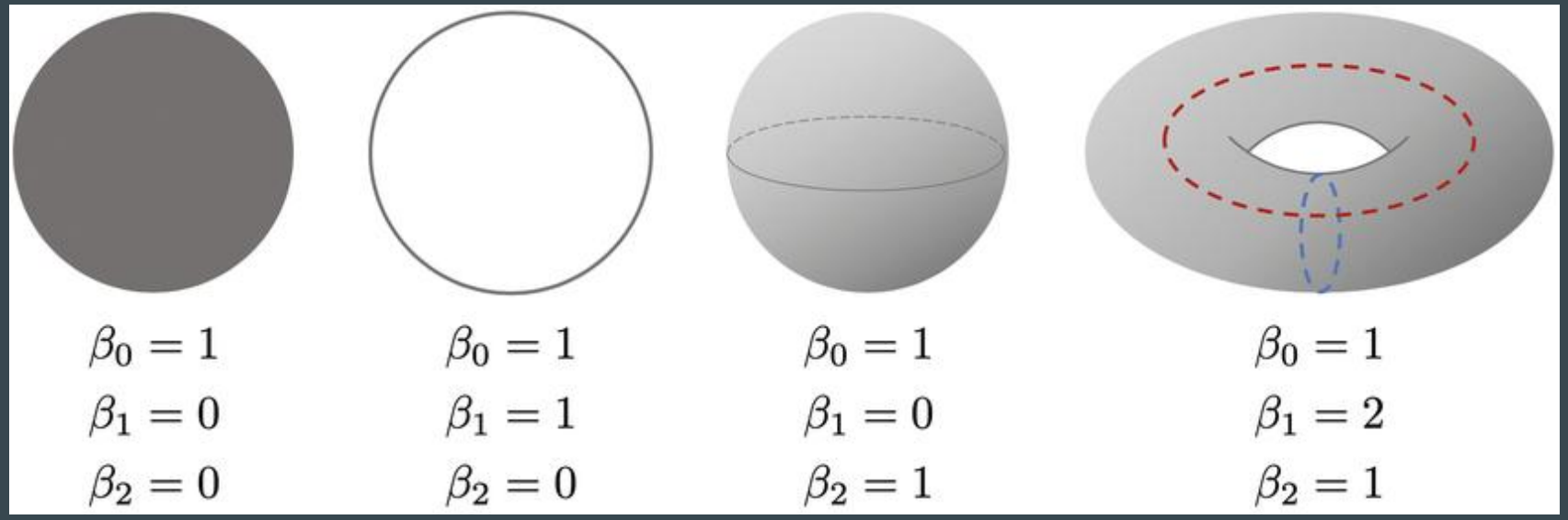
“Towards Creating a Comprehensive Deepfake Dataset”



- Freshman and Sophomore year research
- Collaborated with 5 other peers, then continued the project alone
- Used over ten Deepfake generation methods and unique Python libraries such as scrapetube and opencv

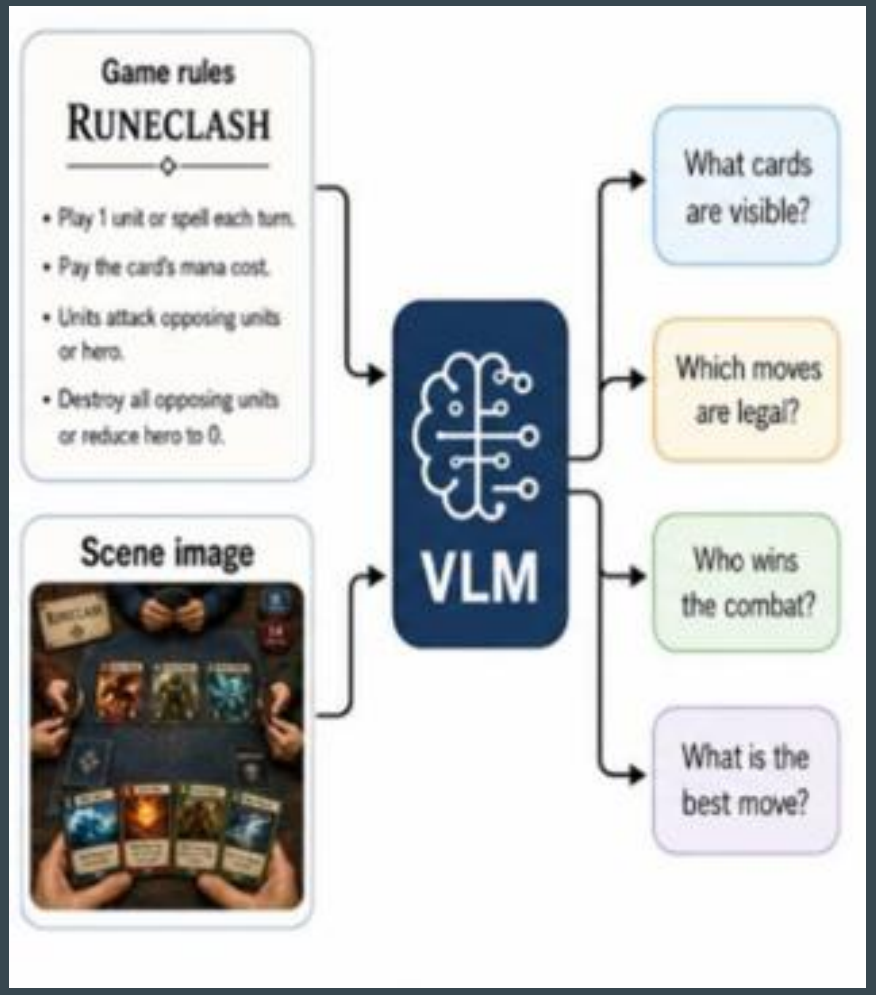
Betti Number Research

- My current research at Binghamton
- Linear Algebra and Differential Geometry focus
- Using python to simulate generation of Betti numbers from graphs

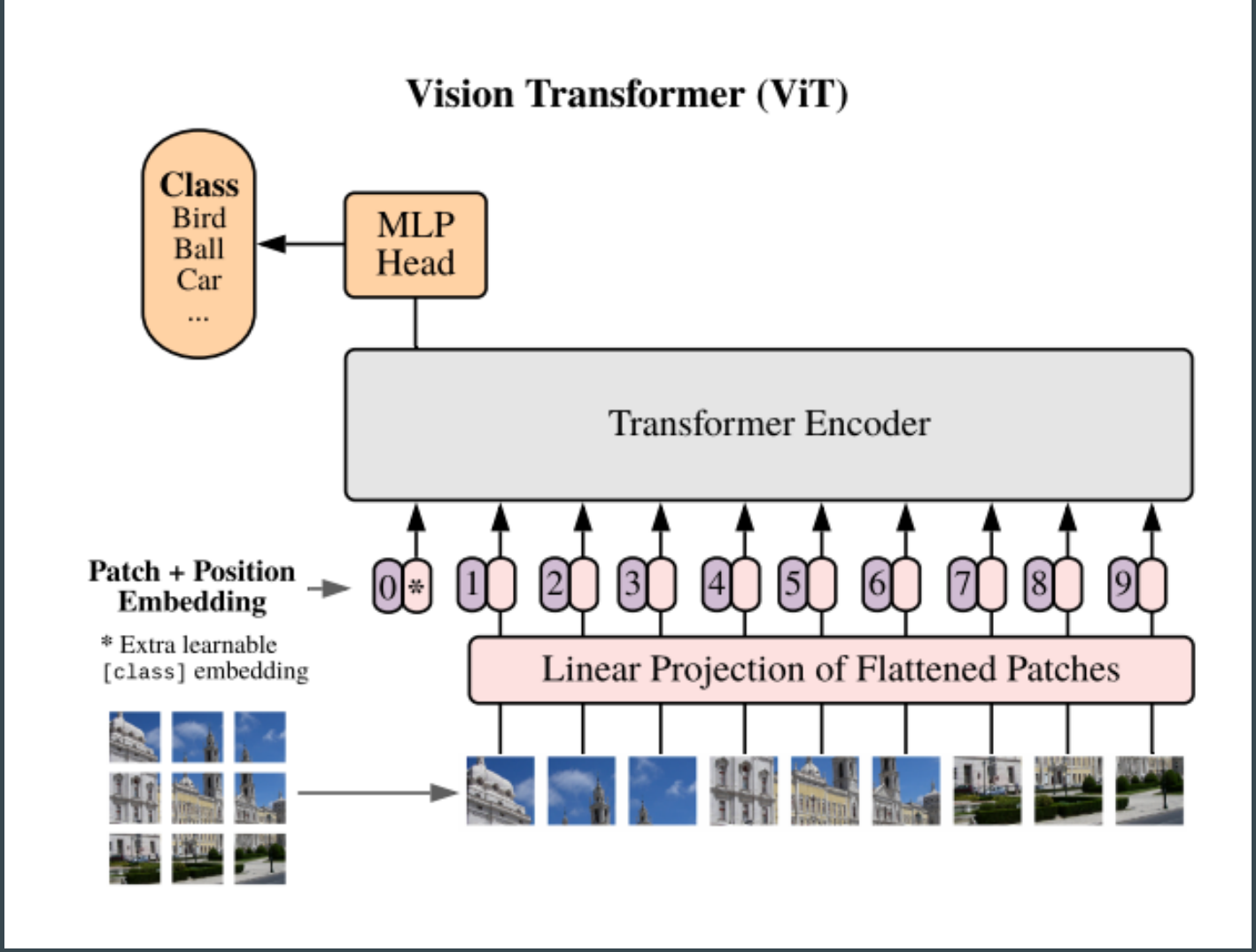


Research Interest at UCF

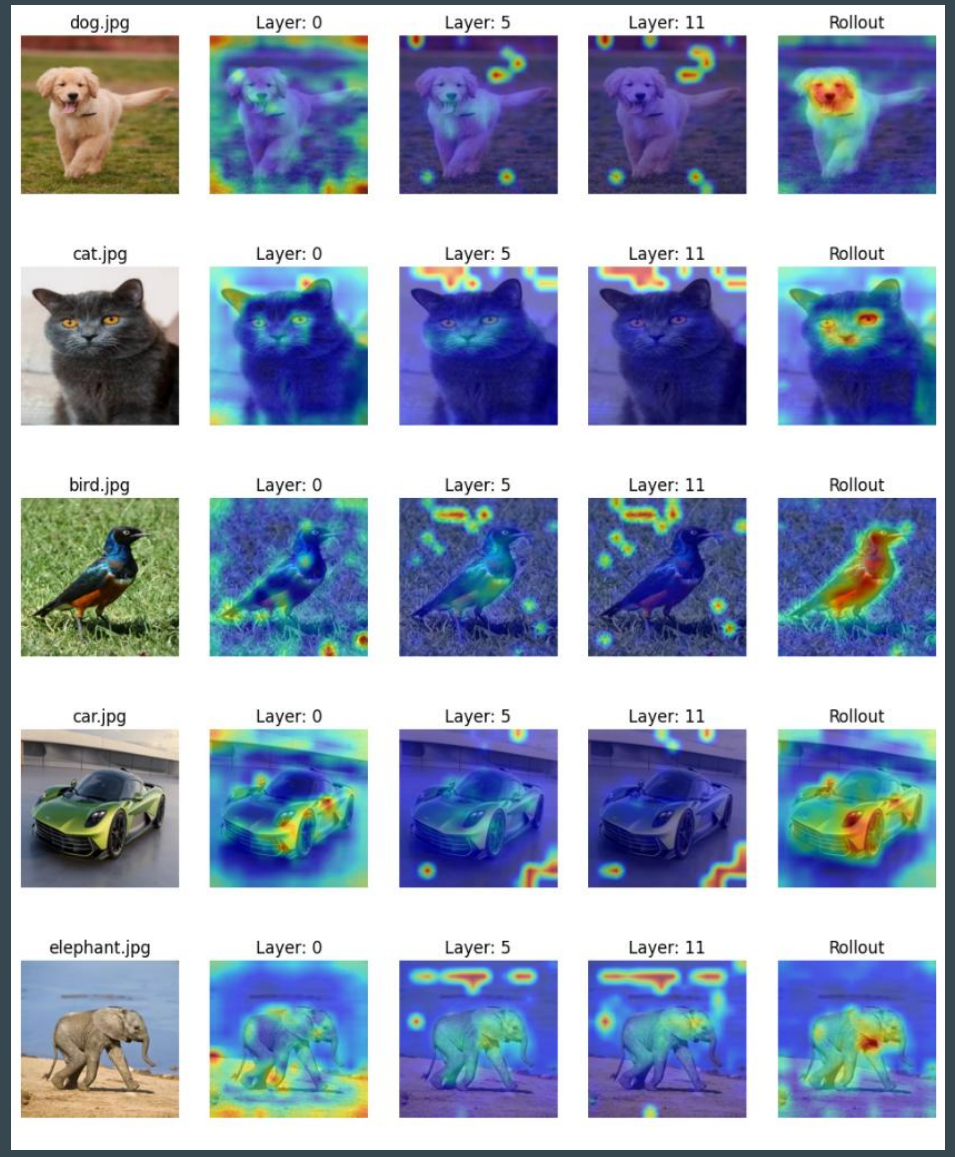
- Project 16: Cards on the Table: Do VLMs Understand Card Games?
  - Sabbir Mollah
- Roadmap:
  - Evaluate current VLMs on card game performance (Pokemon TCG, Digimon, etc.)
  - Generate our own game and evaluate performance
  - Train a model used as a memory bank for the VLM to help make the optimal decision for a given game state

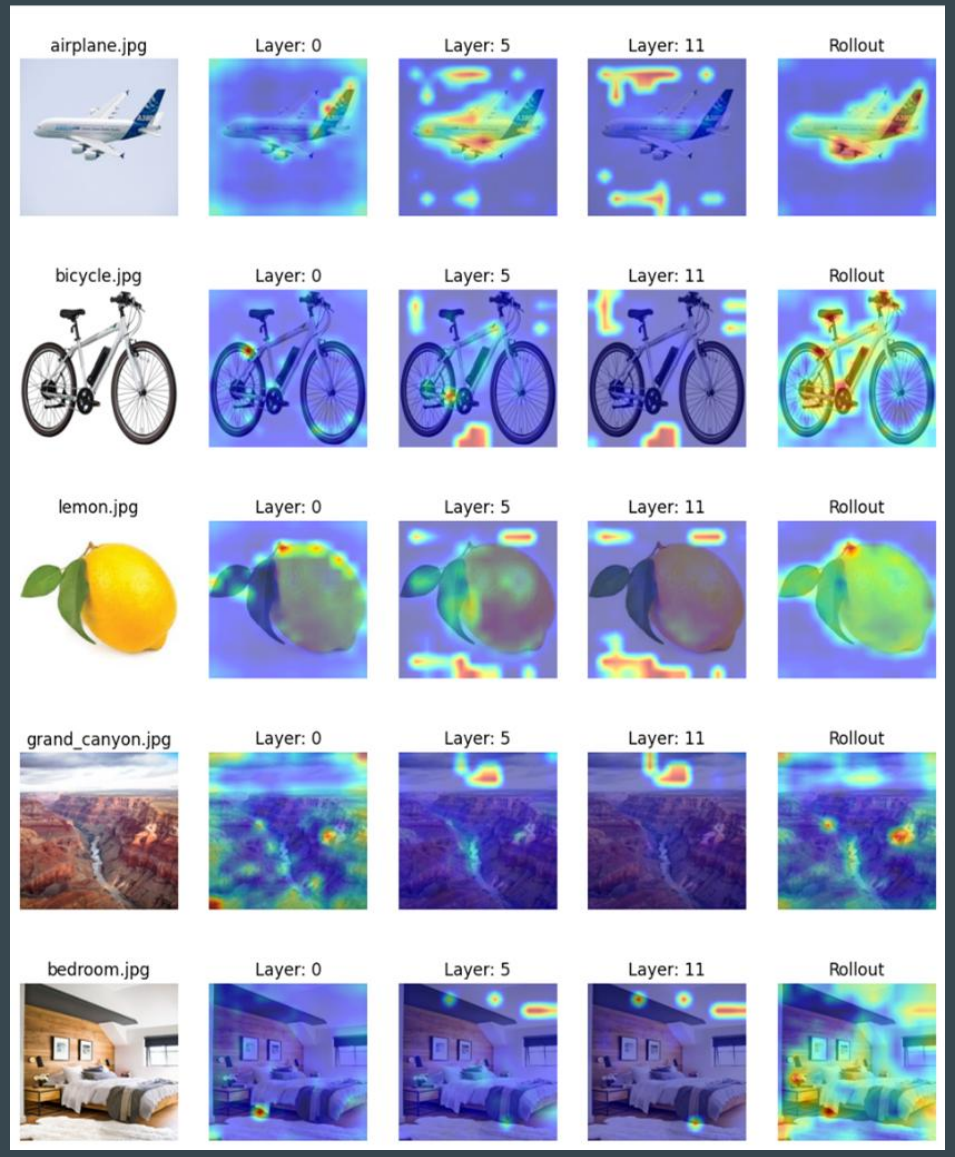


Assignment 1: ViTs Overview



Assignment 1: Images & Attention Maps





Assignment 1: Model Predictions

	Image filename	Ground-truth label	Top-1 prediction	Top-2 prediction	Top-3 prediction
0	dog.jpg	dog	golden retriever (98.24%)	Labrador retriever (0.42%)	Sussex spaniel (0.1%)
1	cat.jpg	cat	Egyptian cat (58.51%)	tabby, tabby cat (17.21%)	tiger cat (15.97%)
2	bird.jpg	bird	jacamar (27.24%)	coucal (24.73%)	bee eater (11.94%)
3	car.jpg	car	sports car, sport car (97.45%)	racer, race car, racing car (1.45%)	car wheel (0.42%)
4	elephant.jpg	elephant	African elephant, Loxodonta africana (75.05%)	Indian elephant, Elephas maximus (13.52%)	tusker (11.21%)
5	airplane.jpg	airplane	airliner (99.51%)	wing (0.29%)	warplane, military plane (0.06%)
6	bicycle.jpg	bicycle	bicycle-built-for-two, tandem bicycle, tandem (68.11%)	mountain bike, all-terrain bike, off-roader (29.43%)	tricycle, trike, velocipede (0.33%)
7	lemon.jpg	lemon	lemon (99.5%)	orange (0.31%)	Granny Smith (0.01%)
8	grand_canyon.jpg	grand canyon	valley, vale (45.05%)	cliff, drop, drop-off (4.0%)	dam, dike, dyke (3.51%)
9	bedroom.jpg	bedroom	wardrobe, closet, press (17.77%)	window shade (16.99%)	sliding door (14.95%)

Assignment 2: Progress Update

- Created the prompts
- Downloaded the CIFAR-10 dataset
- Preparing steps for using CLIP for Zero-Shot Classification



Thank you!

Questions?