Final Project
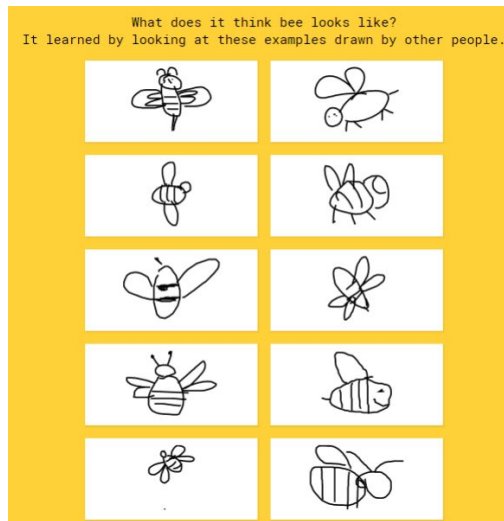
Quick & Draw

Quick, Draw

- https://quickdraw.withgoogle.com/

- AI can draw doodle
  - Classification
  - Generation

- Dataset
  - contains 50M drawings encompassing 340 label categories

You need to do

- Train a doodle AI

- Basic
  - **Classifier (Guess)**
  - Given a doodle draw, classify what the image it is

- Advanced
  - **Generator (Draw)**
  - Given the topic, automatically generate ten images

What does it think bee looks like?
It learned by looking at these examples drawn by other people.

Database

- TAs provide **simplified dataset**

  - 30 label categories
  - Avoid some problems during training models

- Link
  - **https://drive.google.com/drive/folders/1SV8ZxvQU9sMgIdZmLLm6FJ93JZ6LUMEG?usp=sharing**

Evaluation

- **30% Classifier**
  - 30 Questions

- **30% Generator**
  - 10 Questions
  - TAs will use our classifier to judge(objective) 80%
  - TAs see your result to judge(subjective) 20%

- **20% Presentation**
  - **Demo on 1/3 on class**
  - **Presentation 1/8、1/10**

- **20% Report**

Classifier

- **Input**
  - **csv**
    - **Another 40 unlabeled test data would be provided for the evaluation.**
- **Output**
  - **csv**
    - **An output data with one predict label in the same order of the testing.csv.**
- **Report.**
- **Other kinds of classifier models besides the provided one are allowed.**
- **You are also encouraged to implement data argumentation by your generating data.**

Generator

- **Input**
  - **csv**
    - 30 categories of the training data that used in classifier.
- **Output**
  - **png**
    - 10 images for 1 category
    - Each image is 64x64
    - Save path is /output/image, and file name format is name_id.png.
      - Ex: /output/image/bee_1.png
  - **csv**
    - Content is like this:
    - 1 csv for 1 image

[[0.9998202, 0.9987941, 0.93186057, 0.9966238, 0.91679335, 0.9800049, 0.9731357, 0.99439144, 0.9997655, 0.99812794, 0.9999549 4, 0.98862994, 0.97969437, 0.99776214, 0.9658253, 0.97290987, 0.9981747, 0.9933071, 0.999966, 0.9956804, 0.99413687, 0.997981 7, 0.98482907, 0.9914841, 0.9983516, 0.9918269, 0.97088695, 0.9969896, 0.9966923, 0.9876487, 0.9994496, 0.018290758, 0.0406551 36, 0.046274334, 0.07535586, 0.03200391, 0.035372853, 0.9997342, 0.9929935, 0.9989375, 0.9981152, 0.9905323, 0.99966407, 0.994 4602, 0.99079067, 0.9948695, 0.99992406, 0.9999089, 0.9999672, 0.9899292, 0.9126092, 0.9967885, 0.999905, 0.998593, 0.9999261, 0.98951936, 0.9998375, 0.99924386, 0.9938402, 0.9985653, 0.9999008, 0.9975301, 0.99265176, 0.9450933], [0.9980088, 0.97127396,

    - Save path is /output/csv, and file name fomat is name_id.csv.
      - Ex: /output/csv/bee_1.csv

Generator

- **Report**

- **You are encouraged to use any type of Generative Adversarial Network(GAN) to generate images.**

Demo

- Hold on **1/3 10:00 ~ 12:00**

- Each team makes sure to bring your own laptop

- TAs will announce questions on iLMS

- After running your model, submit your result on the iLMS before 12:00

Presentation

- **1/8 10:00 ~ 12:00 & 1/10 10:00 ~ 12:00**

- Each team has **7 minutes** to present

- Make sure your content include
  - Methodology
  - Evaluation
  - Test Result
  - Demo Result
  - Discussion
  - Conclusion

Report

- Methodology
  - Classifier
  - Generator
- How to train your model
  - Parameter Setting
  - Optimizer
  - Evaluation
  - etc
- Test Result
- Demo Result
- Discussion
- Conclusion

Less than 3 pages to summarize your project

Submission Deadline

- **1/2 23:59** submit your **code**
  - Python code (.py)

- **1/3 10:00 ~ 12:00** submit **your result of demo**
  - Classifier result (.csv)
  - Generation result (.png and .csv)

- **1/10 11:59** submit your presentation **ppt slides** and **report**
  - PPT slides (.pdf)
  - report (.pdf)

TA Office Hour

- EECS Building R830

- Time
  - **Wed 13:00 ~ 15:00**