use tensor flow - open source by google

keras - library built upon tensor flow

in tf everything is array of numbers

keras makes it easier

cv2 - computer vision library python

get that installed. processes images

convert color pixels into grayscale. makes into a range

use glob - reads all files in a directory without having to loop - helper library

classification metrics

admissions, linear algebra, stats, discrete math, matrices, python

ideally would want want more images per listing, and don't need as many listings