

CS696E Progress Update 5

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Problems I'm Working On

- Broadly speaking, problems in the facial recognition domain
 - Clustering of unknown faces to detect similar faces across images
 - Recognizing age from faces to determine kids vs. adults in images

Previously on CS696E....

- Completed a functioning face clustering pipeline that can cluster similar faces
 - Uses the Dual Shot Face Detector for detecting faces, dlib's 128-dimensional face encoder for encoding faces, and the Chinese Whispers algorithm for clustering
 - Code has been handed off to Jagath

Where I'm At Now

- Functioning child/adult estimator pipeline!
 - Created my own child/adult dataset that combined all the images of two separate datasets, APPA-REAL and UTKFace, and changed labeling scheme to be much simpler adult vs. child
 - ~25k faces of adults, ~6k faces of children
 - Fine-tuned pre-trained Squeeze-and-Excitation network on this dataset
 - Obtained validation accuracy of around 95%
- For whole images, this pipeline uses the same DSFD face extractor for extracting faces, after which classification is done on the extracted faces

What's Next?

- Try to improve performance on age classification
- Open to other ideas