15-464/15-664 Reference List for April 8, 2020

We began by looking at some of the research from Facebook Reality Labs, as presented by Yaser Sheikh in this talk:

Yaser Sheikh, “Metric Telepresence,” SIGGRAPH Frontiers Talk, August 1, 2019.
https://www.youtube.com/watch?v=aIq0wn2APhw

The following two papers discuss in detail the material that we covered:

Wei, Shih-En, Jason Saragih, Tomas Simon, Adam W. Harley, Stephen Lombardi, Michal Perdoch, Alexander Hypes, Dawei Wang, Hernan Badino, and Yaser Sheikh. "VR facial animation via multiview image translation." *ACM Transactions on Graphics (TOG)* 38, no. 4 (2019): 1-16.
https://research.fb.com/publications/vr-facial-animation-via-multiview-image-translation/

Lombardi, Stephen, Jason Saragih, Tomas Simon, and Yaser Sheikh. "Deep appearance models for face rendering." *ACM Transactions on Graphics (TOG)* 37, no. 4 (2018): 1-13.
https://stephenlombardi.github.io/projects/deepappearancemodels/
https://research.fb.com/publications/deep-appearance-models-for-face-rendering/

We then took a look at this research from ETH Zurich and Disney that combines blendshapes with physics:

Kozlov, Yeara, Derek Bradley, Moritz Bächer, Bernhard Thomaszewski, Thabo Beeler, and Markus Gross. "Enriching facial blendshape rigs with physical simulation." In *Computer Graphics Forum*, vol. 36, no. 2, pp. 75-84. 2017.
https://cgl.ethz.ch/publications/papers/paperKoz17a.php

..followed by this paper on optimizing the 3D printed part set for stop motion animation.

Abdrashitov, Rinat, Alec Jacobson, and Karan Singh. "A system for efficient 3D printed stop-motion face animation." *ACM Transactions on Graphics (TOG)* 39, no. 1 (2019): 1-11. https://www.dgp.toronto.edu/projects/stop-motion-faces/

I concluded with a thought to have a look at detailed anatomy of the face and think about how it should be considered when creating facial animations, whether they are creative (e.g., fantasy creatures) or meant to be highly realistic.