References for 16-848 for March 23, 2020

We started by talking about some specific sensors. The first was the GelSight sensor.

https://www.mdpi.com/1424-8220/17/12/2762
https://www.youtube.com/watch?v=aKoKVA4Vcu0

This sensor has recently been incorporated into a dexterous two-fingered gripper:

https://www.youtube.com/watch?v=4hxsZ9nHJWI

We then had a look at the FingerVision sensor:

http://akihikoy.net/notes/?project%2FFingerVision

We then turned to capacitive sensing, looking especially at the flexible sensing technology described in this paper:


We looked at magnetic sensing for soft hands, which basically uses the technology in this paper, without the whisker:

https://ieeexplore.ieee.org/document/8968518

Finally, we had a look at this 2015 survey, reviewing the various types of sensors and their uses with various robot hands.

You may also find the following survey useful. It provides complementary information to the first one and also gives some benchmarks from human sensory capabilities.


This recent survey focuses on optical sensing. However, it also mentions in detail the commercial sensors that are currently used on various robot hands. If you can’t find it online (check Akihiko’s web page), ask me for a copy.