

16-848 Spring 2020: Reference List for April 1st

We spent a good amount of time with the following paper on relaxed rigidity constraints:

Sundaralingam, Balakumar, and Tucker Hermans. "Relaxed-rigidity constraints: kinematic trajectory optimization and collision avoidance for in-grasp manipulation." *Autonomous Robots* 43, no. 2 (2019): 469-483.

<https://link.springer.com/article/10.1007/s10514-018-9772-z>

<https://www.youtube.com/watch?v=Gn-yMRjbmPE>

Along the way, we took a look at this classic paper, which includes many gems, including an example of in-hand manipulation.

Li, Zexiang, Ping Hsu, and Shankar Sastry. "Grasping and coordinated manipulation by a multifingered robot hand." *The International Journal of Robotics Research* 8, no. 4 (1989): 33-50.

<https://journals.sagepub.com/doi/pdf/10.1177/027836498900800402>

We then turned to some of the details of this graphics paper, which uses sampling to generate a manipulation path for the hand and the fingers.

Ye, Yuting, and C. Karen Liu. "Synthesis of detailed hand manipulations using contact sampling." *ACM Transactions on Graphics (TOG)* 31, no. 4 (2012): 1-10.

<http://yutingye.info/SIG12.html>

The follow-up to the relaxed-rigidity paper is this one. We will have a little bit closer look next time.

Sundaralingam, Balakumar, and Tucker Hermans. "Geometric in-hand regrasp planning: Alternating optimization of finger gaits and in-grasp manipulation." In *2018 IEEE International Conference on Robotics and Automation (ICRA)*, pp. 231-238. IEEE, 2018.

<https://ieeexplore.ieee.org/abstract/document/8460496>

https://www.youtube.com/watch?v=-ML2vwo_850