15-464/15-664 Reference List for February 10

We began today by reviewing the CCD algorithm for inverse kinematics and talking about some of the ways in which the basic algorithm can be expanded to work with practical systems and to achieve better results.   The paper that I showed in class is this one:

Kenwright, Ben. "Inverse kinematics–cyclic coordinate descent (CCD)." *Journal of Graphics Tools* 16, no. 4 (2012): 177-217.
http://www.virtualpuppetry.com/inverse_kinematics_ccd/paper.pdf

We then went on to discuss a number of Jacobian related techniques, following the discussion in the following paper.   This paper is so far my favorite reference for Jacobian related techniques for solving inverse kinematics.   I find its mathematical explanations to be very clear:

Buss, Samuel R. "Introduction to inverse kinematics with jacobian transpose, pseudoinverse and damped least squares methods." *IEEE Journal of Robotics and Automation* 17, no. 1-19 (2004): 16. http://math.ucsd.edu/~sbuss/ResearchWeb/ikmethods/iksurvey.pdf

You may also find the following survey useful.   It collects a tremendous number of references organized by method of solution and is relatively up to date on current research related to Inverse Kinematics.

Aristidou, Andreas, Joan Lasenby, Yiorgos Chrysanthou, and Ariel Shamir. "Inverse Kinematics Techniques in Computer Graphics: A Survey." In *Computer Graphics Forum*, vol. 37, no. 6, pp. 35-58. 2018. https://onlinelibrary.wiley.com/doi/pdf/10.1111/cgf.13310