

16-848: Reference list for Monday, January 29th

Today we began by having a look at the hand as presented from the point of view of how to draw it realistically, using the following book as a reference. The lecture recording has been posted to piazza.

Morpho: Hands and Feet: Anatomy for Artists (Morpho: Anatomy for Artists, 5)
Book 5 of 10: Morpho: Anatomy for Artists | by Michele Lauricella | Nov 12, 2019

We then turned to hand anatomy from a biomechanics perspective as presented in the following book. A pdf version of this book has been posted to piazza.

Kapandji, I. A. "The physiology of the joints, volume I, upper limb." *American Journal of Physical Medicine & Rehabilitation* 50, no. 2 (1971): 96.

The details on tactile sensing were taken from this very interesting review paper. Roland Johansson has an extensive body of intriguing research on the human hand if you are interested in exploring further.

Johansson, R. S., and J. R. Flanagan. "6.05-Tactile sensory control of object manipulation in humans." *The Senses: A Comprehensive Reference, Academic Press, New York, NY* (2008).
http://psyc.queensu.ca/~flanagan/papers/JohFla_BC_The_Senses_07.pdf

A review of theories and findings related to evolution of the human hand can be found here and elsewhere in Mary Marzke's research:

Marzke, Mary W., and Robert F. Marzke. "Evolution of the human hand: approaches to acquiring, analysing and interpreting the anatomical evidence." *Journal of anatomy* 197.01 (2000). <http://onlinelibrary.wiley.com/doi/10.1046/j.1469-7580.2000.19710121.x/pdf>

We looked at results from these two papers on hand modeling in Computer Graphics:

Bohan Wang, George Matcuk, Jernej Barbič, "Hand Modeling and Simulation Using Stabilized Magnetic Resonance Imaging," *ACM Transactions on Graphics* 38(4) (SIGGRAPH 2019), Aug 2019. <https://viterbi-web.usc.edu/~jbarbic/hand-mri/>

Bohan Wang, George Matcuk, Jernej Barbič, "Modeling of Personalized Anatomy using Plastic Strains," *ACM Transaction on Graphics (TOG)*, 40(2), 2021.
<https://viterbi-web.usc.edu/~jbarbic/plasticDefo/>

The following two books are excellent resources about human hand anatomy and what is known about human hand function and control. I have copies as well as pdf scans of relevant chapters. Let me know if you would like to take a look.

Brand, Paul W., and Anne Hollister. *Clinical mechanics of the hand*. Mosby Incorporated, 1999.

Jones, Lynette A., and Susan J. Lederman. *Human hand function*. Oxford University Press, 2006.