

CHARACTER ANIMATION

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Modeling



Rigging, Skeletonization



Motion Capture, Motion Synthesis



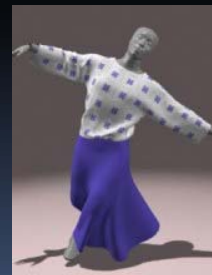
Muscle Modeling & Deformation



Skinning



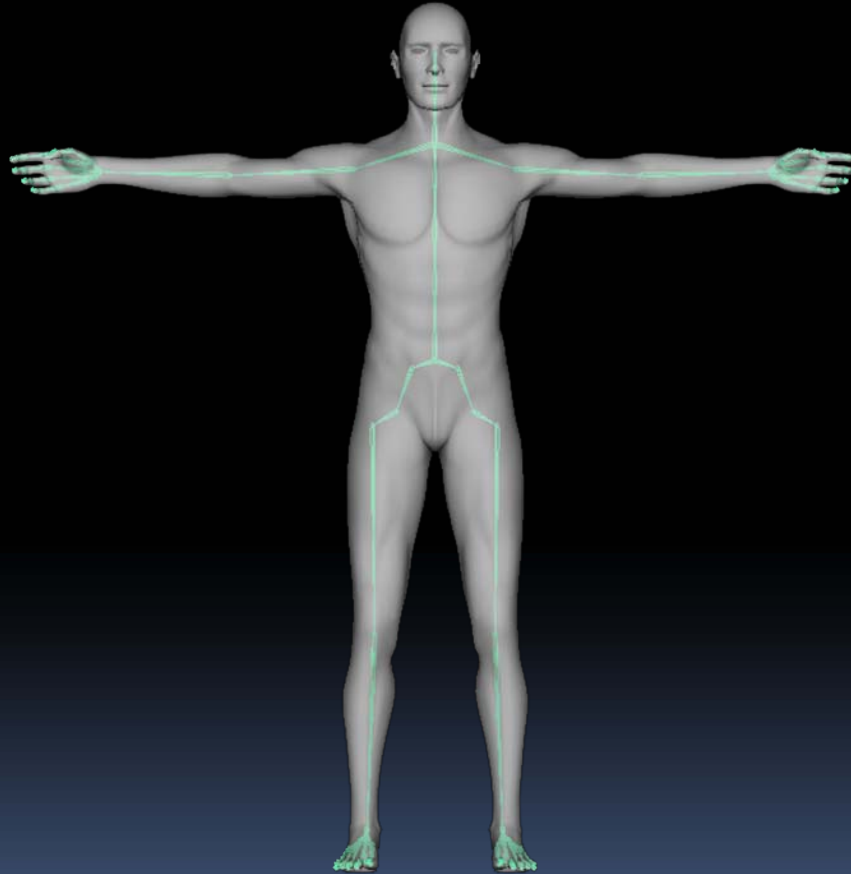
Facial Animation, Clothing, Hair



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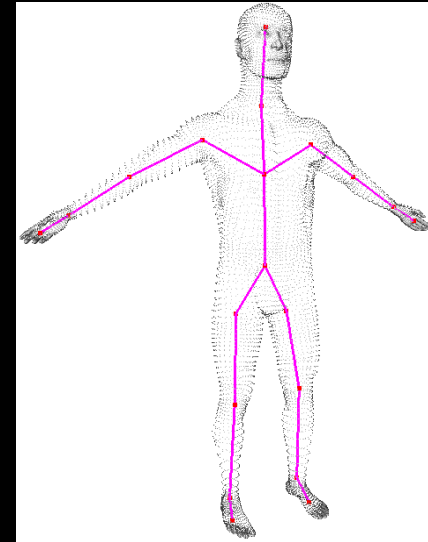
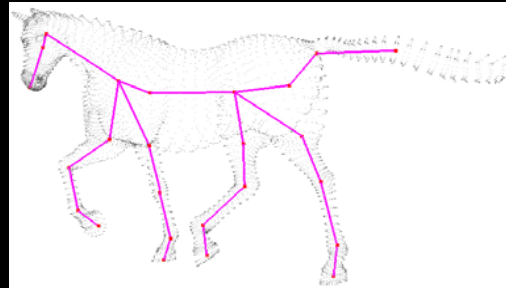
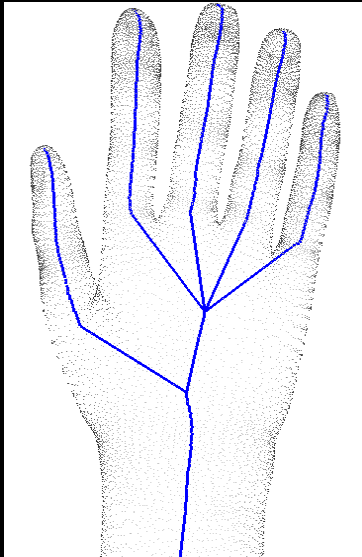
Rigging vs. Skeletonization



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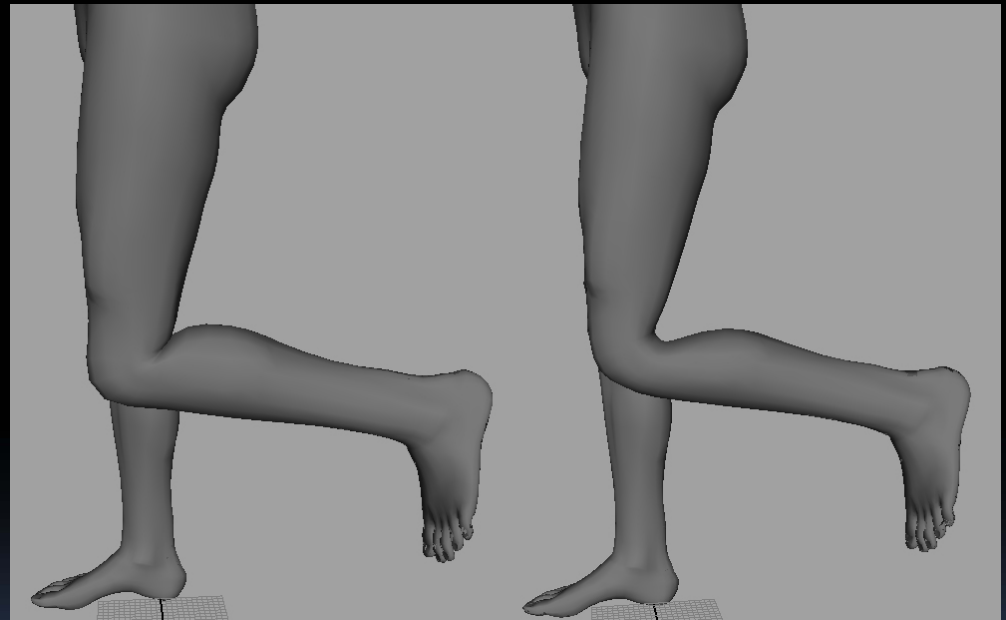
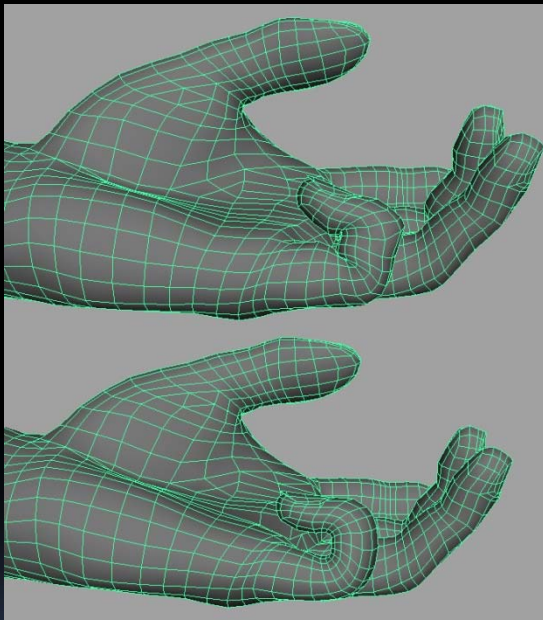
Automatic Rigging



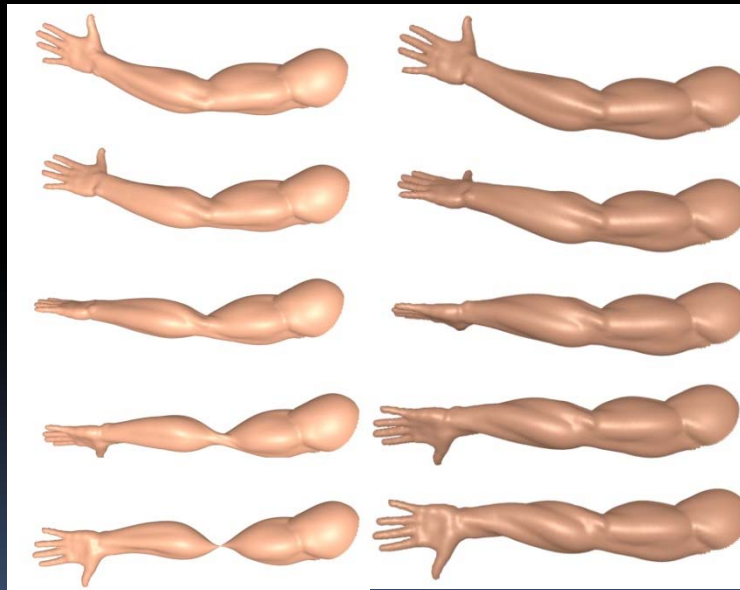
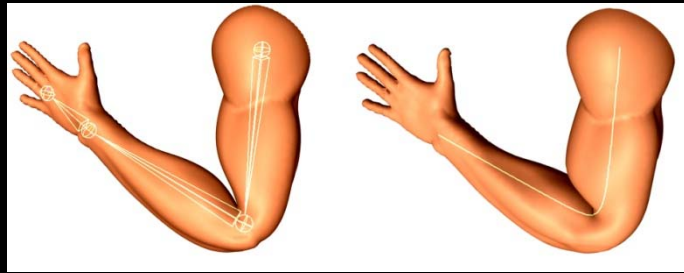
JunJun Pan, Xiaosong Yang, Xin Xie, Philip Willis, Jian J Zhang, Automatic rigging for animation characters with 3D silhouette, Computer Animation and Virtual Worlds, Volume 20 Issue 2-3, 2009, p121-131.

Solution 1: Stretch Smooth Skinning

- X. S. Yang and J. J. Zhang, Stretch It - Realistic Smooth Skinning, the 3rd International Conference on Computer Graphics, Imaging and Visualisation, , July 2006

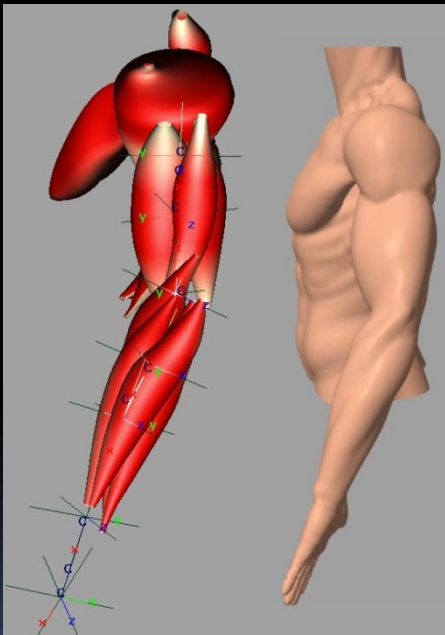


Solution 2: Curve Skeleton Skinning



Solution 2: Curve Skeleton Skinning

- X. S. Yang, A. Somasekharan and J. J. Zhang, Curve skeleton skinning for human and creature characters, *Computer Animation and Virtual Worlds*, Volume 17, Numbers 3-4, July 2006, pp. 281-292(12)



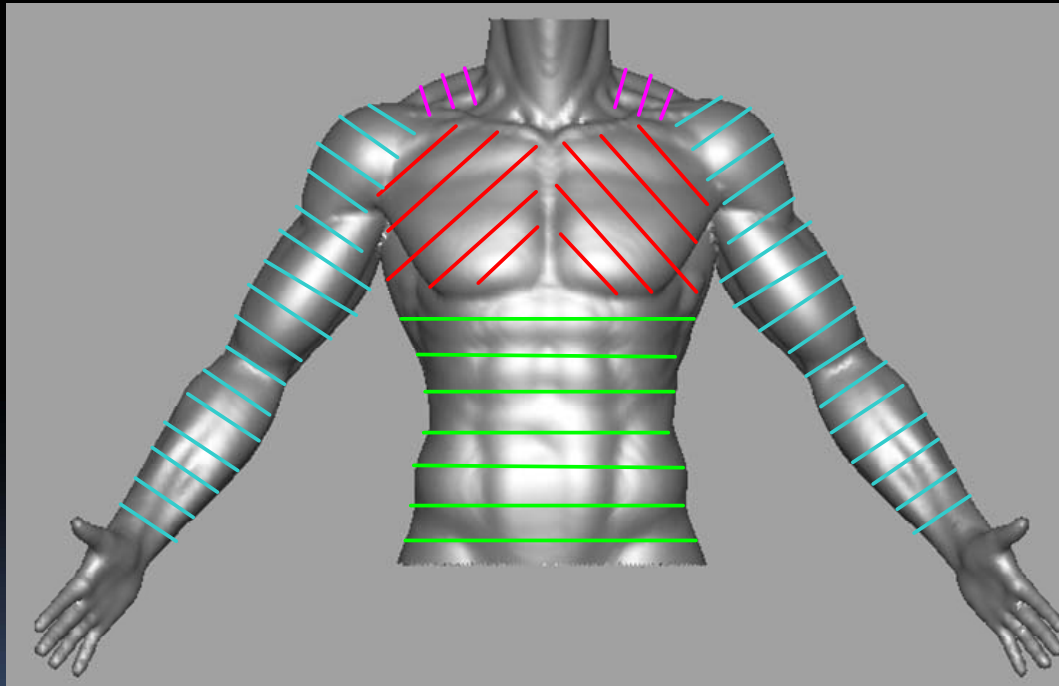
Muscle Modelling & Deformation



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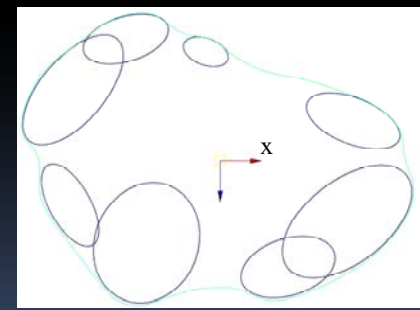
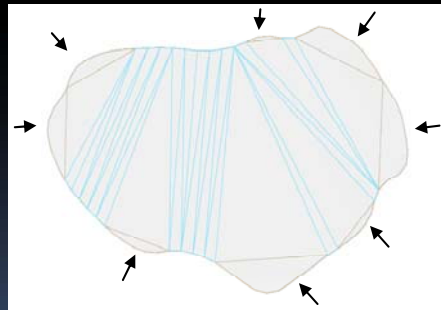
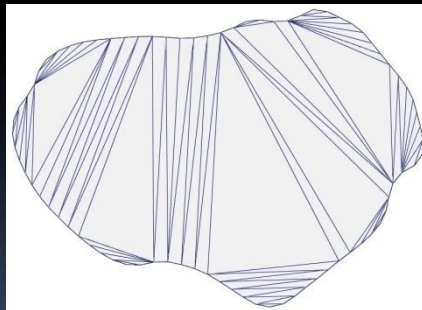
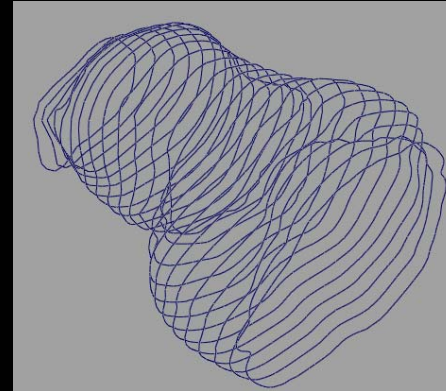
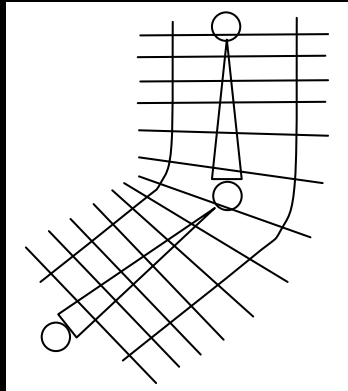
Automatic Muscle Modelling



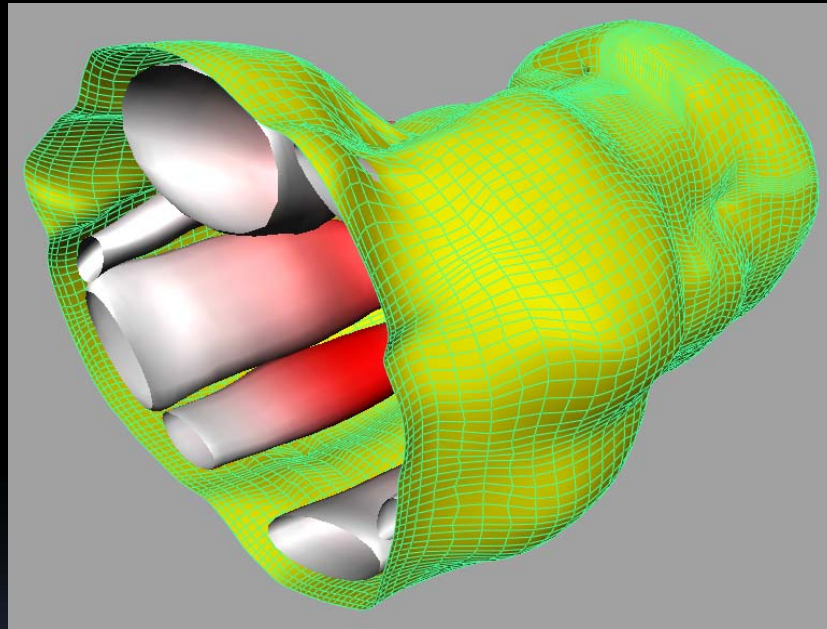
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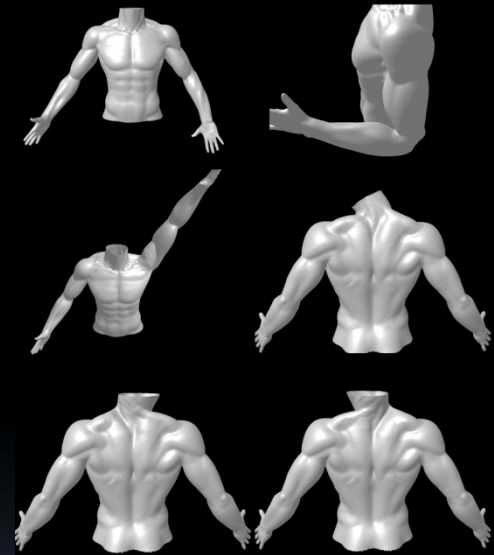
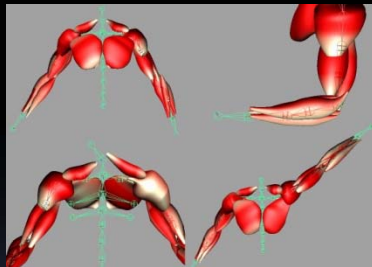
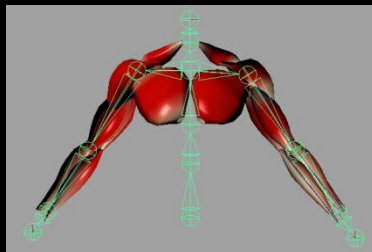
Automatic Muscle Modelling



Automatic Muscle Modelling



Automatic Muscle Modelling



Automatic Muscle Modelling

X. S. Yang and J. J. Zhang, Automatic Muscle Generation for Character Skin Deformation, Computer Animation and Virtual Worlds, Volume 17, Numbers 3-4, July 2006, pp. 293-303(11)

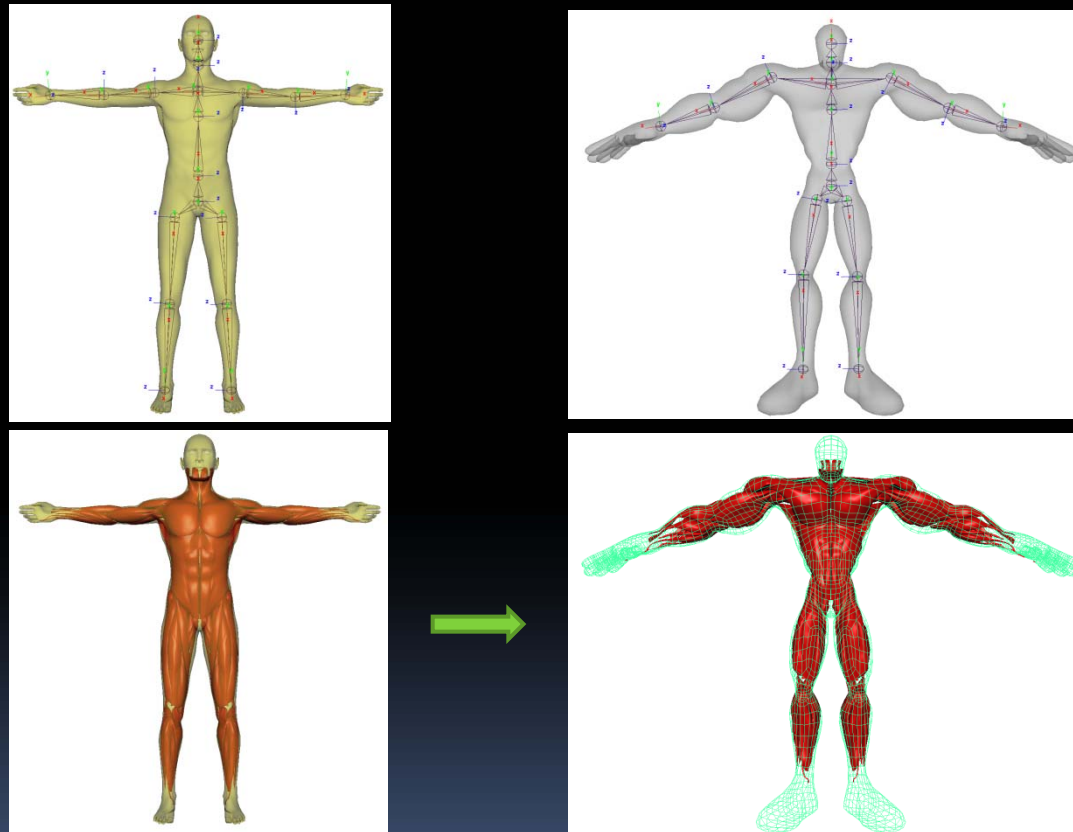
New Scientist, Wiedza I Zycie and MIT Technic Review etc.

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Muscle Retargetting

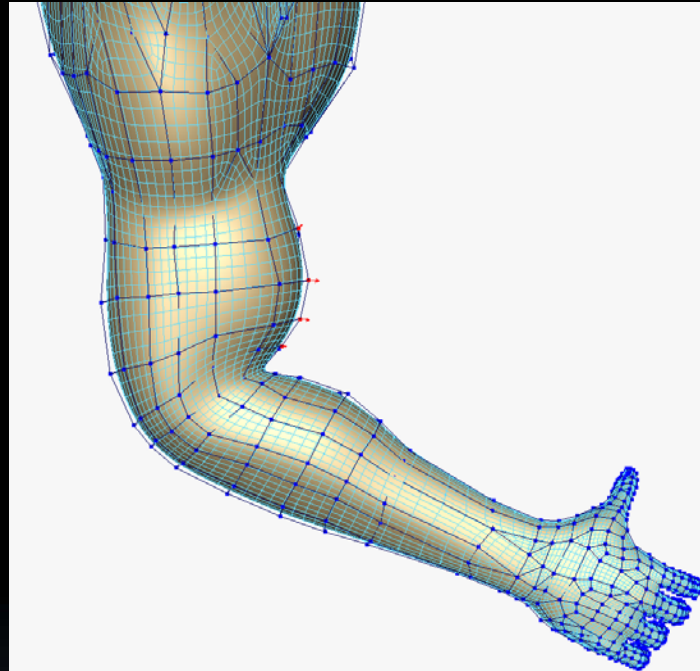
Great Western Research (GWR project) 2007-2010



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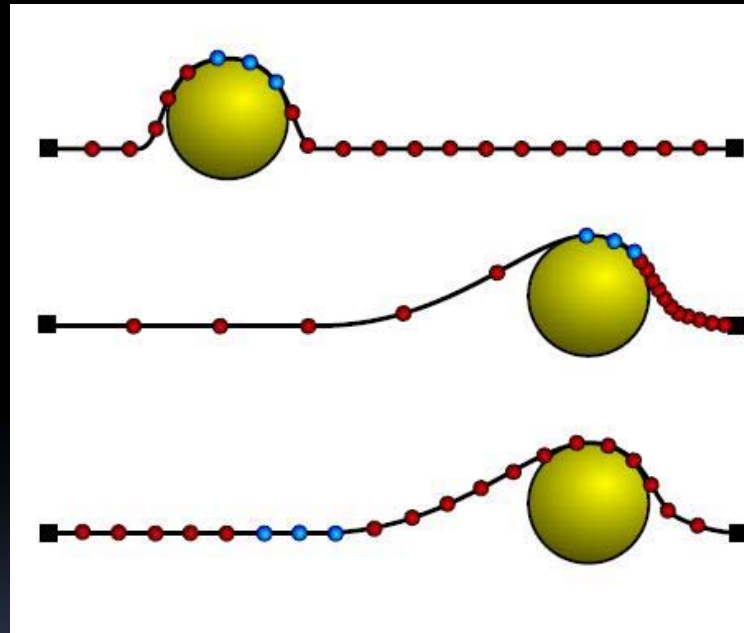
Physical based method



Jian J. Zhang, Xiaosong Yang, Yunfeng Zhao, Bar-net driven skinning for character animation, Computer Animation and Virtual Worlds, (2006) 18(4-5), 437-446

Secondary Animation

Skin Sliding



Xiaosong Yang, Richard Southern, Jian Jun Zhang, Fast simulation of skin sliding, *Computer Animation and Virtual Worlds*, Volume 20 Issue 2-3, 2009, p 333-342.