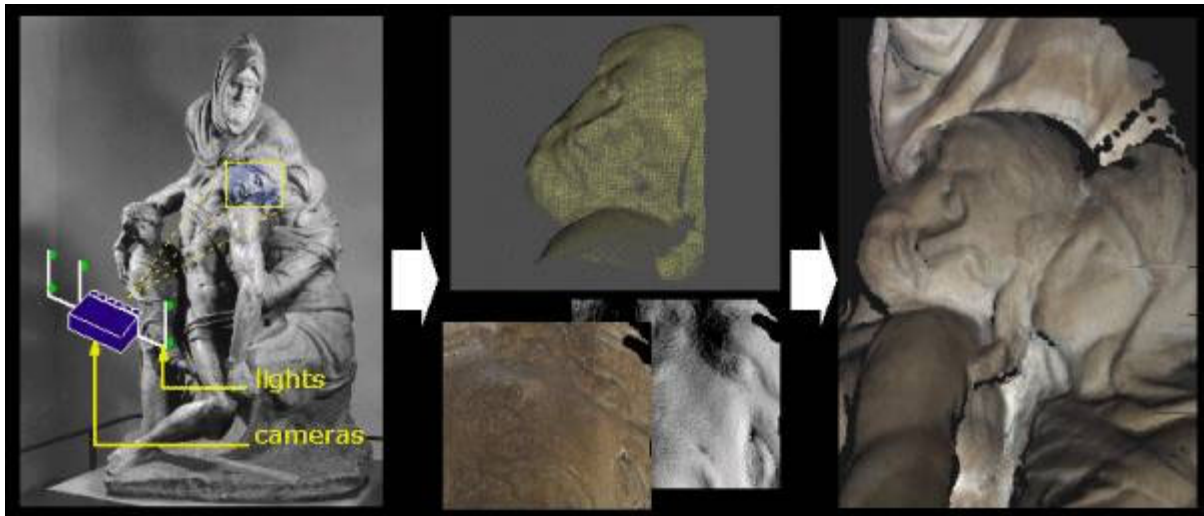# EN193S08 - 3D Photography
Instructor: Gabriel Taubin
Mondays & Wednesdays 8:30 – 9:50 am

By 3D Photography we refer to a number of processes that use cameras and lights to capture the shape and appearance or 3D objects, data structures used to represent these objects, and algorithms to modify these representations. These processes, data structures, and algorithms provide simple ways of creating graphical models for a number of applications, including computer animation, special effects for movies, game development, electronic commerce, heritage preservation, reverse engineering, and virtual reality. 3D Photography is a hot research topic in computer vision, computer graphics, and robotics.

In this course we will study basic 3D capture techniques, the most popular parametric and implicit surface representations, and several methods to smooth, denoise, edit, compress, transmit, simplify, and optimize surfaces. The material will be a mix of lectures, discussion, and student presentations of project work. In addition, the class will benefit from a number of guest lectures by experts in the field.

The course will be project oriented, with the goal of building a complete 3D scanning and modeling system. Working with the instructor, the students will divide the target system into projects, will organize themselves into small groups, and each group will take responsibility for one of the projects. Rather than a final exam, each group will be required to successfully implement its project, write a project report, document its work, and make a project presentation.