

15-869 Computational Aspects of Fabrication



Instructor: Stelian Coros
Lectures: Tue/Thu 1:30PM-2:50PM, GHC 4303
Units: 12
Classes start: Spring 2015

Course Description: 3D printing has the potential to profoundly impact our lives, for two main reasons. First, it eliminates constraints associated with traditional manufacturing techniques, leading to a limitless space of design possibilities for arbitrarily complex structures. Second, it gives anyone - artists, enthusiasts, even children - the means to create unique, personalized artifacts. The combination of vast design spaces and new class of designers requires the development of next generation computational design tools that leverage the full potential of 3D printing. The *Computational Aspects of Fabrication* course will explore research challenges associated with this endeavor. In particular, depending on time and class interests, the course will provide an overview of additive manufacturing technologies, digital geometry representations, optimization methods, physically-based simulation and forward and inverse models for computer-aided design. The course should be appropriate for graduate students in all areas and for advanced undergraduate students.

