



Carnegie Mellon University

School of Architecture

College of Fine Arts, CFA 201

Carnegie Mellon University

Pittsburgh, PA 15213



Maze City Generation, Chloe Wang & Harley Guo, more images from the course can be found in the Virtual Gallery:

<https://www.artsteps.com/view/61fc22b8d2f8d6f94cd9246c>

62-706: Generative Systems for Design

Units: 12

Instructor: Jinmo Rhee

This course is for visual artists, enthusiasts, and designers from different areas (game, product, architecture, building performance, etc.). Designers can develop algorithms and computational models that can generate design alternatives. We refer to such algorithms and models as generative systems. Generative systems have been an important topic of research in recent decades in computational design and in other disciplines. Earlier approaches were based on classical artificial intelligence and optimization methods; recently, a variety of computational techniques from different fields have been incorporated in the development of new generative systems. With recent developments in machine learning, we can even develop models that learn automatically from data or experience. In this course, we focus on the basic or classical techniques, although with an acknowledgment to recent developments, to briefly introduce learning techniques.

The main goal of this course is to foster the student's capacity to formulate design problems computationally, with emphasis on the synthesis of design alternatives. This course provides an overview of the main topics in Generative Systems, with historical notes and technical specifications. Throughout the semester, the students will address different design problems with different generative techniques.