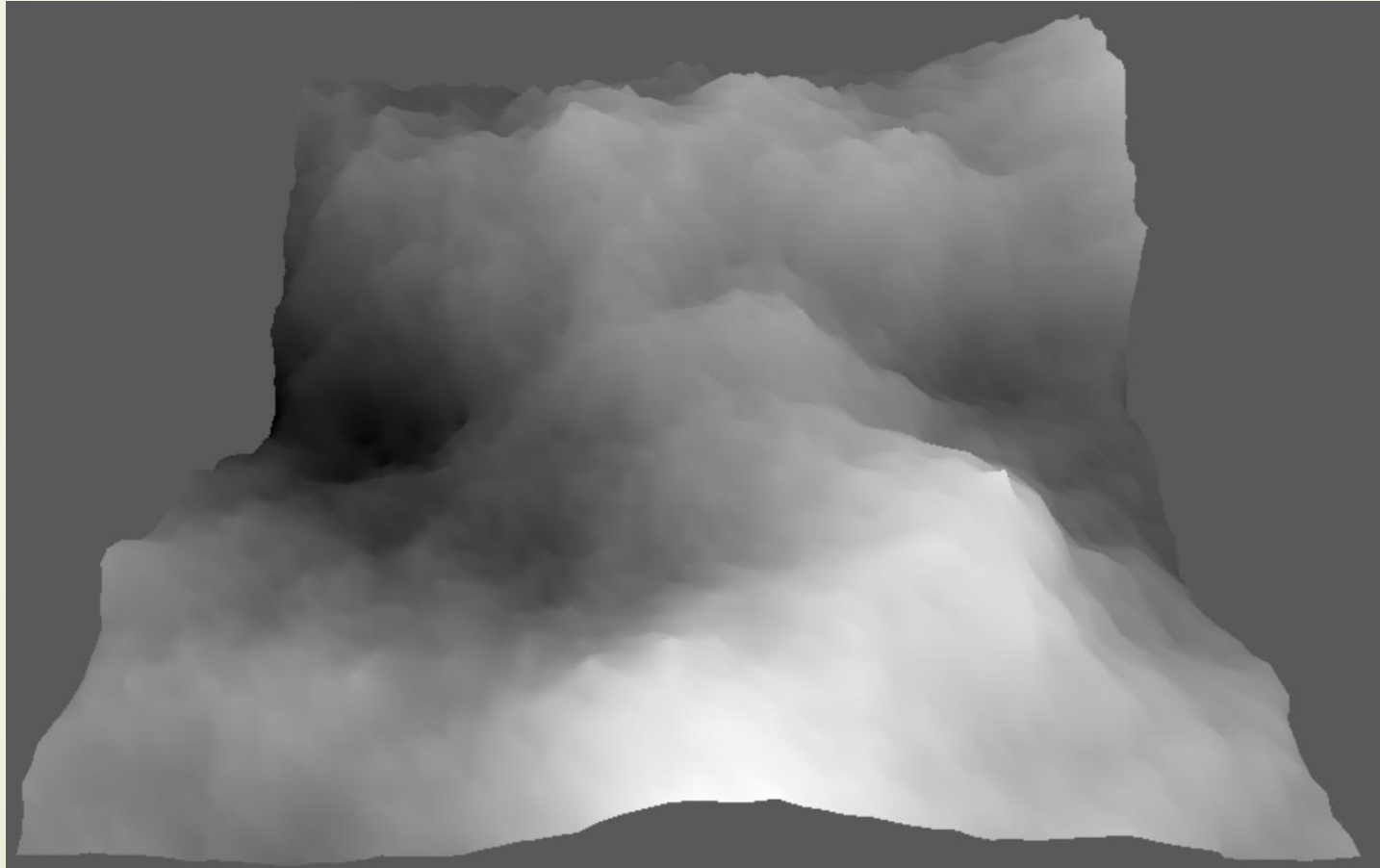# Real-time Procedural Terrain Generation

Course project of CS590 Procedural Modeling of Purdue University
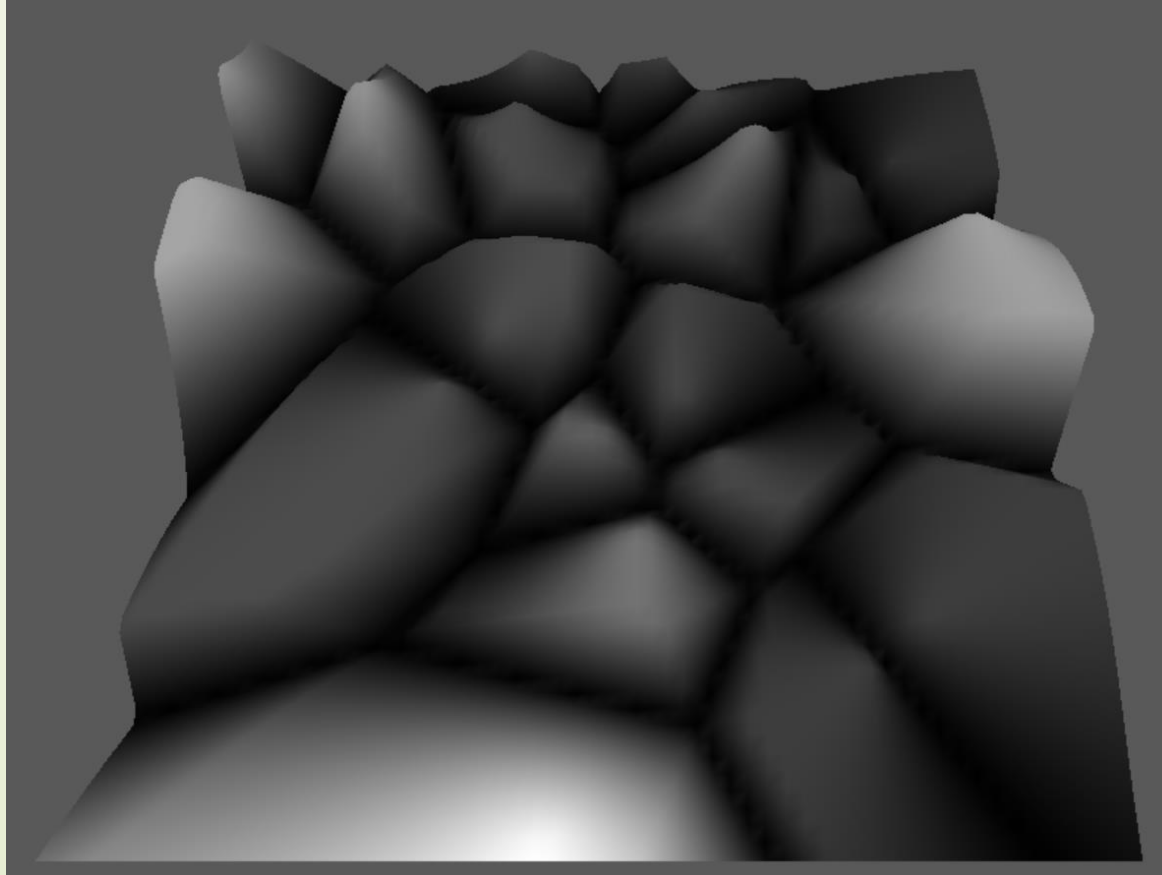
Approximation of 1/f Noise

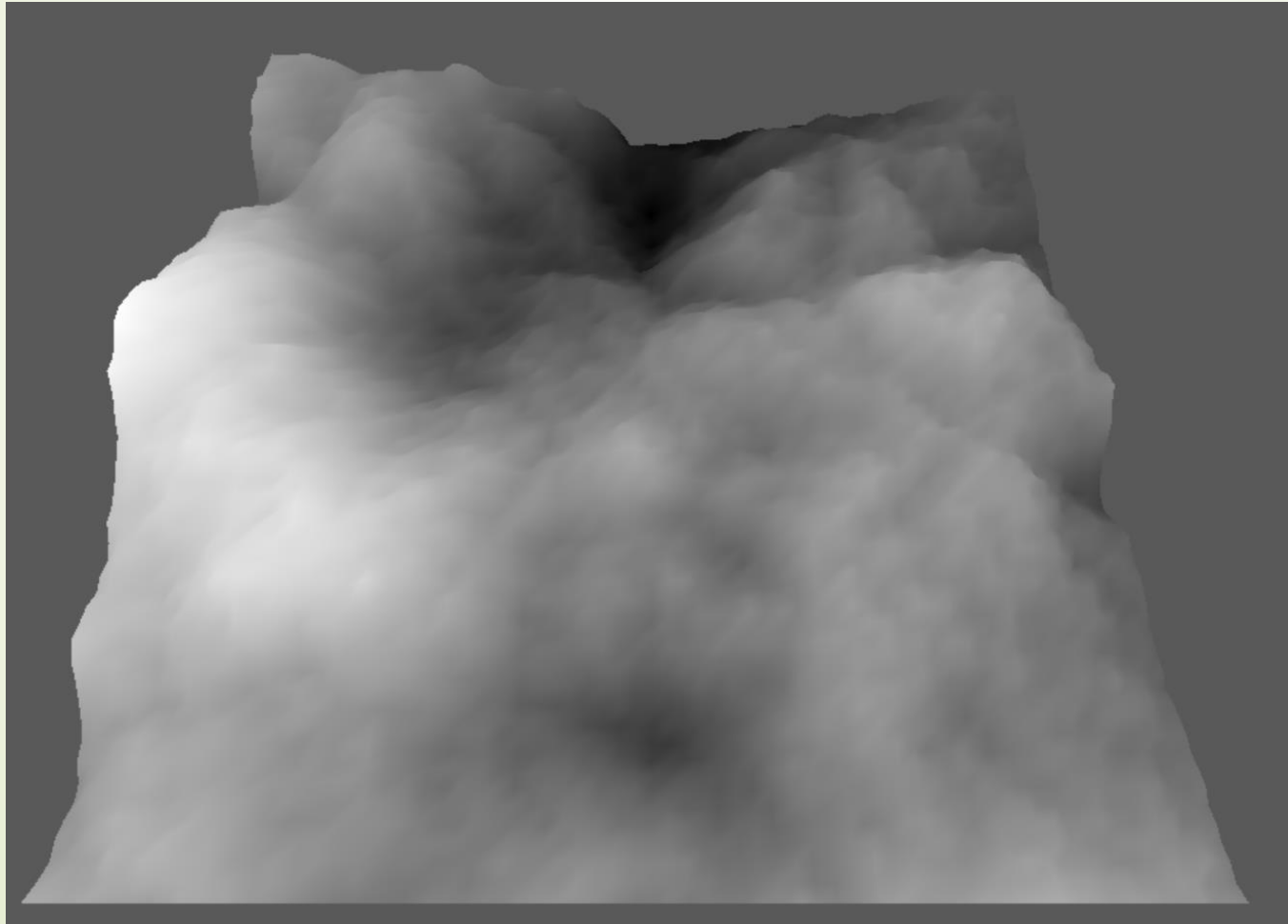- Midpoint displacement method using diamond-square algorithm.

Voronoi Diagram

- $h = c_0 d_0 + c_1 d_1 + c_2 d_2 + \cdots + c_n d_n$, d_n is the distance to a set of random points, starting from the closest to the farest.

- Here $c_0 = -1, c_1 = 1$

Generation of Base Terrain

- Combination of 1/f noise and Voronoi diagram with a ratio of 2/3.

Texture Mapping