

**Background:**

We're developing a program that procedurally generates worlds through the use of noise based fractal algorithms (more about this in a bit) in addition to evolutionary, macro-scale algorithms such as the modeling of tectonic plates, large-scale erosion, wind/precipitation patterns and Holdridge life zones, etc. Using these algorithms we will render a voxel-based world, with the hopes of eventually moving on to a gradient-colored mesh grid or something more advanced/pretty.

**Problems:**

Sam can't draw squares (update: Sam can draw squares now)

Tectonic plates are weird and hard (but we found a thesis and a library for it)

We have like 7 different algorithmic frameworks to implement: prioritizing implementation or ground-up construction from math

Height map doesn't allow for (damn pretty) caves or arches

Memory and processor constraints (we are representing/evolving an entire world with points)

Process

**Harder Problems for the Future:**

How do you combine fractal algorithms with evolutionary algorithms

Planes

Trains

**Agenda:**

1. Explain world generation process (2 min)
2. Talk about algorithms (2 min)
3. Talk about graphics (3 min)
4. Discuss order of applying algorithms, terrain generation design choices (10 min)
5. Discuss program architecture design choices (5 min)
6. Questions (3 min)