1106-H1-1134 **Douglas Dunham*** (ddunham@d.umn.edu), Department of Computer Science, University of Minnesota, Duluth, Duluth, MN 55812-3036, and **John Shier** (johnpf99@frontiernet.net), 6935 133rd Court, Apple Valley, MN 55124. *An Algorithm for Creating Artistic Random Fractal Patterns.* Preliminary report.

We describe an algorithm that creates aesthetic patterns by randomly filling a bounded region of the plane with progressively smaller copies of a motif. For circles or ellipses our process produces fractal patterns which are reminiscent of various sized pebbles on a stream bed.

The algorithm starts by placing the largest copy of the motif at some random location in the region. After placing i motifs, the algoritm selects a random trial location within the region at which to place the next motif. If the new motif does not overlap any previously placed motif (whose locations are stored in an array), then this is a successful placement and i is incremented; otherwise another trial location is selected, and this sub-process continues until there is a successful placement. In order to guarantee that copies of a motif fill a region in the limit, it has been found that the area A_i of the i-th motif must be proportional to $(N + i)^{-c}$, where $c > 1$ and $N > 0$ are parameters.

This algorithm has proved to be quite robust in that it can successfully fill regions of various shapes, incuding non-simply-connected regions. Also the motifs need not be connected or simply-connected. We will show a number of sample patterns that explore these possibilities. (Received September 11, 2014)