

Grid

Jonker-Volgenant algorithm



Grid (Jonker-Volgenant algorithm)

assign each point in 2D space to a point on a 2D grid

point-0: [0.75, 0.65] --> [1.0, 1.0]

point-1: [0.50, 0.80] --> [0.5, 1.0]

point-2: [0.35, 0.68] --> [0.0, 0.5]

point-3: [0.64, 0.41] --> [1.0, 0.5]

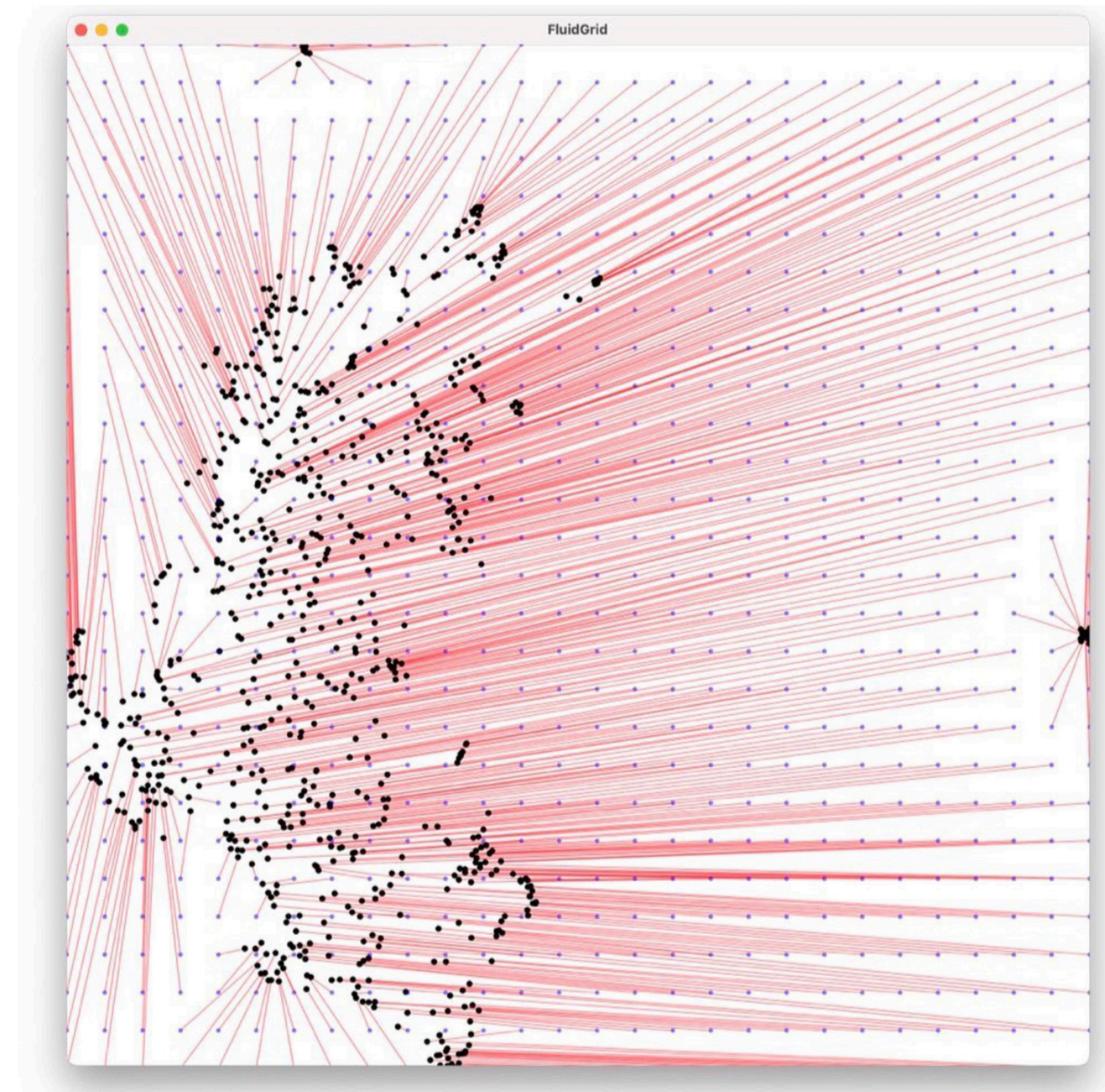
point-4: [0.36, 0.36] --> [0.0, 0.0]

point-5: [0.37, 0.68] --> [0.5, 0.5]

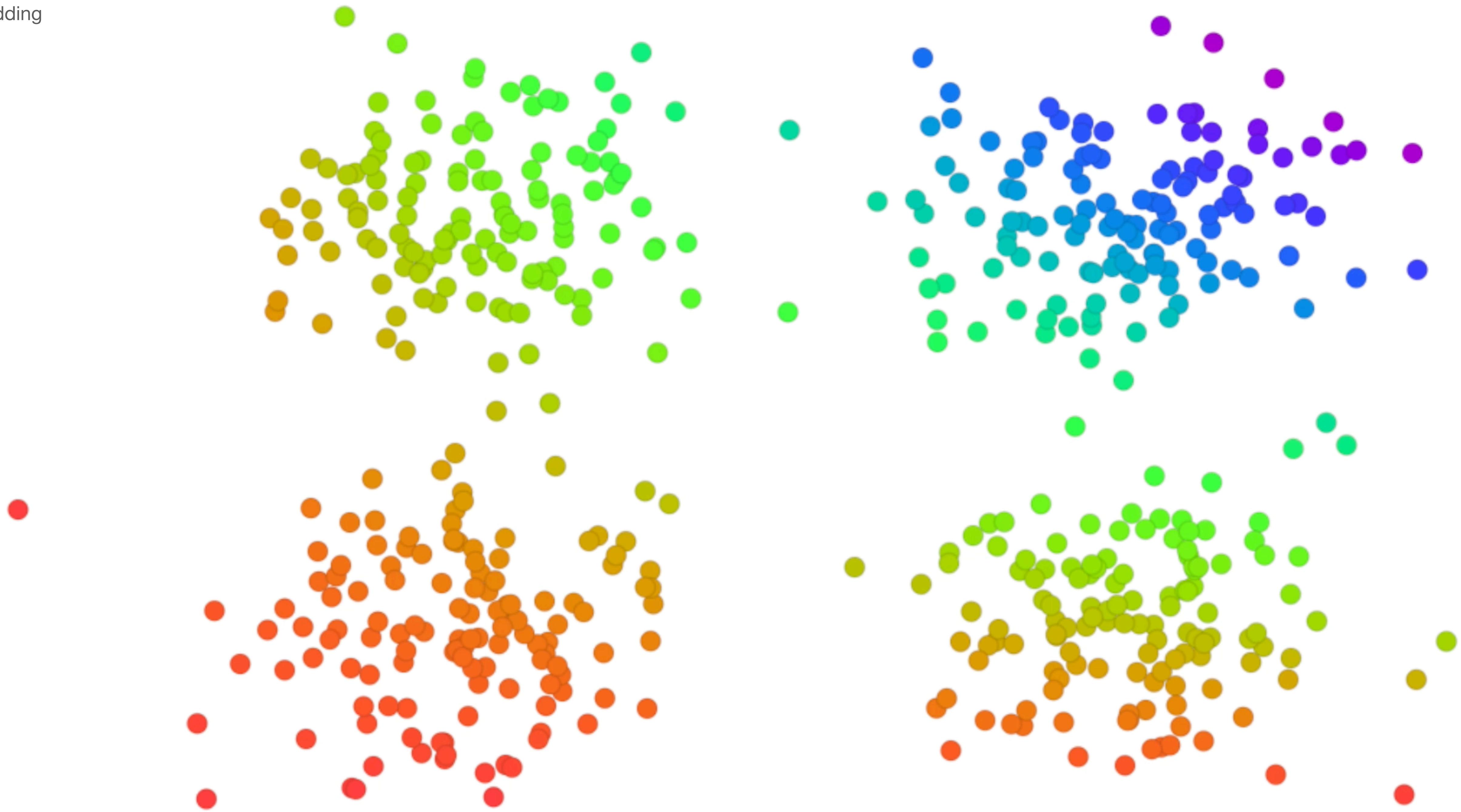
point-6: [0.34, 0.73] --> [0.0, 1.0]

point-7: [0.45, 0.09] --> [0.5, 0.0]

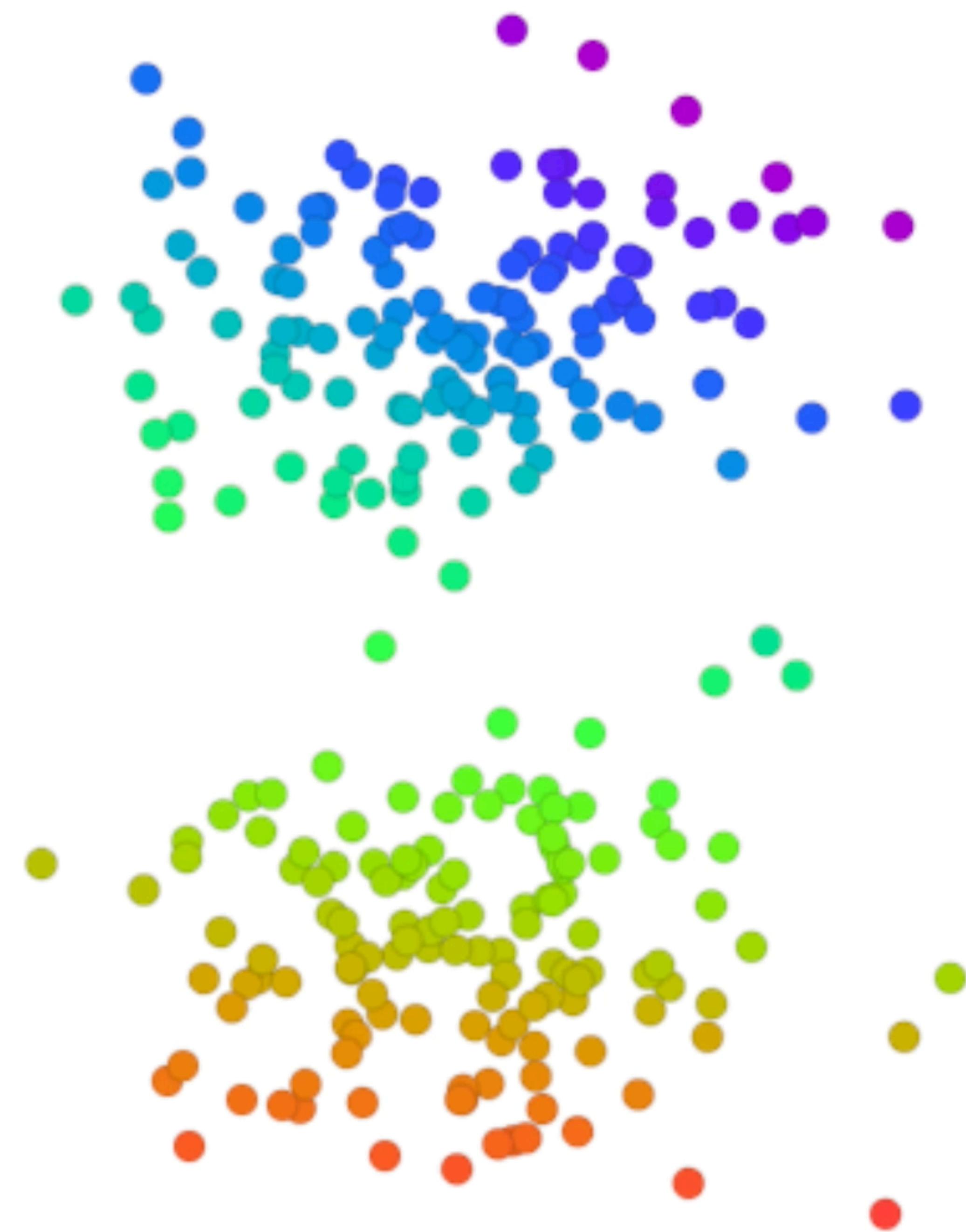
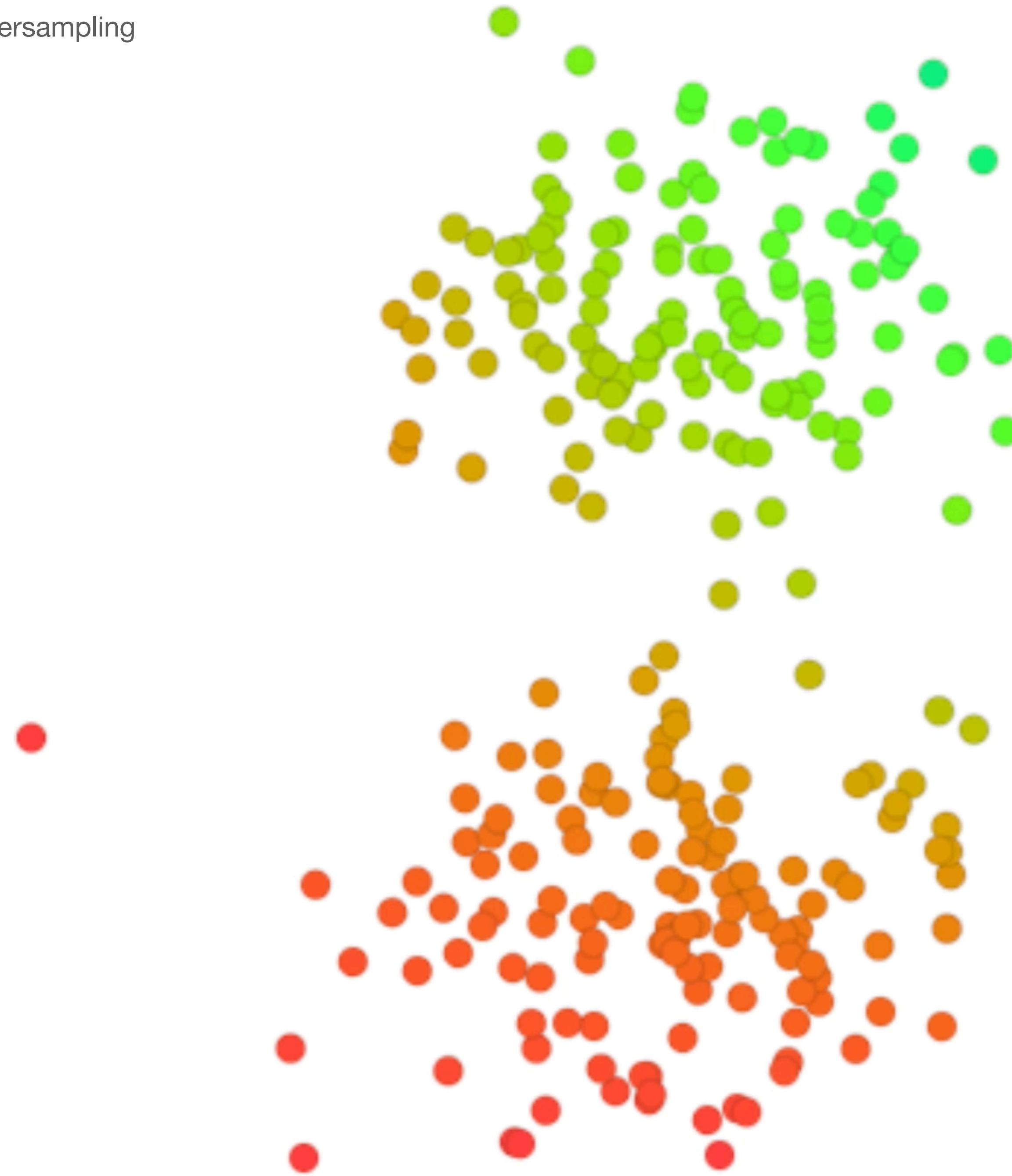
point-8: [0.55, 0.49] --> [1.0, 0.0]

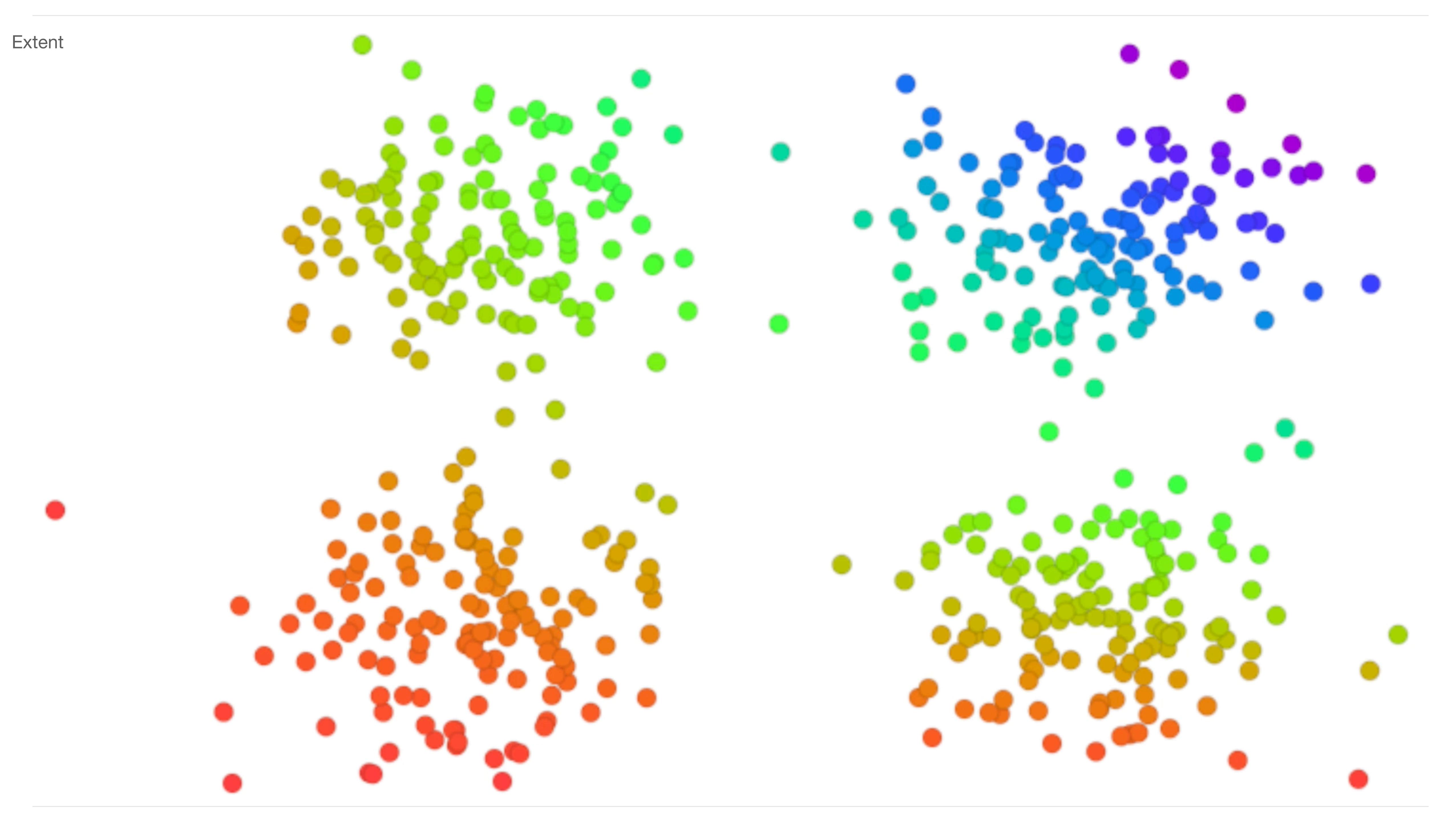


Gridding



Oversampling





Concatenative Synthesis

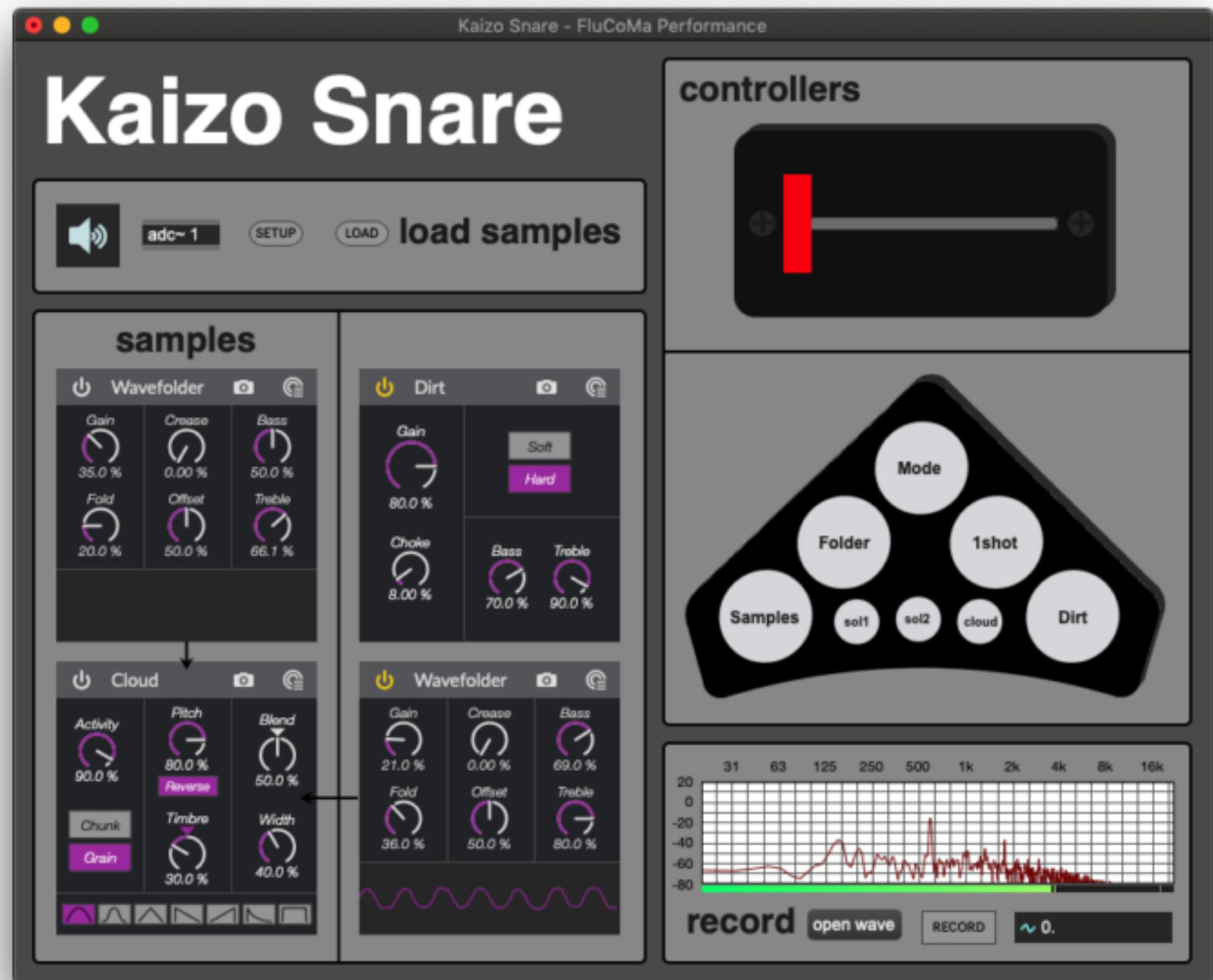
finding *similar* sounds in high-dimensional space



Audio Query (Replace Drum Sounds with other Sounds, 02 with Scalers).scd (~/Desktop/_flucoma/code/flucoma-sc/release-packaging/Examples/Guides) - SuperCollider IDE

```

242
243     // nb. that the minus one is so that the drum slice from the beginning of the file to the first index
244     // is call "-1"
245     // this is because that slice didn't actually get analyzed
246     var slice_id = index - 1;
247     var start_frame = target_indices_array[index];
248     var dur_frames = target_indices_array[index + 1] - start_frame;
249
250     // this will be used to space out the source slices according to the target timings
251     var dur_secs = dur_frames / ~target_buf.sampleRate;
252
253     // as long as this slice is not the one that starts at the beginning of the file (-1) and
254     // not the slice at the end of the file (because neither of these have analyses), let's
255     // do the lookup
256     if((slice_id >= 0) && (slice_id < (target_indices_array.size - 3)),{
257
258         // use the slice id to (re)create the slice identifier and load the data point into "query_buf"
259         ~target_dataset.getPoint("slice-%".format(slice_id.asInteger),query_buf,{
260             // once it's loaded, scale it using the scaler
261             ~scaler.transformPoint(query_buf,scaled_buf,{
262                 // once it's neighbour data point in the kd-tree of source slices
263                 ~kdTree.kNearest(scaled_buf,{
264                     arg nearest;
265
266                     // peel off just the integer part of the slice to use in the helper function
267                     var nearest_index = nearestasString.split($-)[1].asInteger;
268                     "target slice:      %".format(slice_id.asInteger).postln;
269                     "source nearest neighbour slice: %\n".format(nearest_index).postln;
270                     ~play_source_index.(nearest_index,dur_secs);|
271             {
272                 var sig = PlayBuf.ar(1,~target_buf,BufRateScale.ir(~target_buf),0,start_frame,
273                               0,2);
274
275                 var env = EnvGen.kr(Env([0,1,1,0],[0.03,dur_secs-0.06,0.03]),doneAction:2);
276
277                 // include this env if you like, but keep the line above
278                 // because it will free the synth after the slice!
279                 sig = sig * env;
280                 sig * 0.dbamp;
281             }.play;
282
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321             slice-1    -40.249  15.376   21.426
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324             slice-20   34.056  -2.3113  8.0918
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Kaizo Snare

by Rodrigo Constanzo

learn.flucoma.org/explore/constanzo