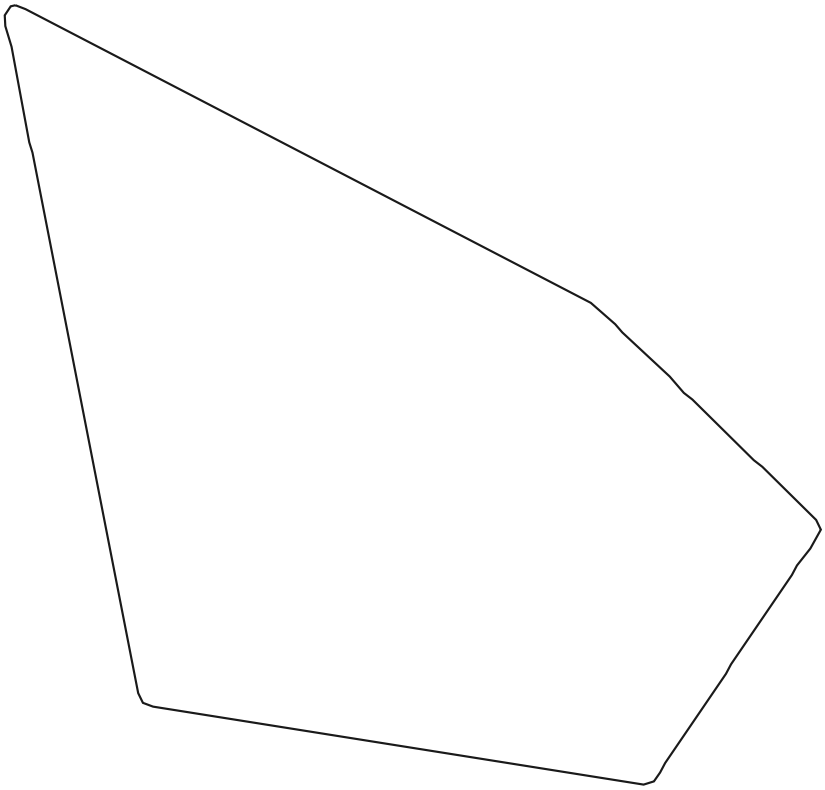
rheart

generative art & aesthetics programs



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This is the documentation for rheart.

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1 Introduction

rheart is a series of programs written in the course of developing a system to generate artistic images.

1.1 Implementation Notes

The programs are written in the programming language Lisp, and should run on any ANSI Common Lisp system. OpenMCL and SBCL are particularly recommended.

1.2 Running The Programs

To run one of the programs, change to its directory and run the file run.lisp in that directory. For example:

```
$ cd draw-something
$ openmcl --load run.lisp
```

In example code (such as above), the dollar sign ($) indicates the command-line prompt. It should not be typed.

2 The Cybernetic Artwork Nobody Wrote

"Cybernetic" generates random descriptions of possible abstract images. It is based on the poetry generation programs so beloved of basic computing texts, but generates descriptions of images rather than limericks. I think someone will probably have written such a program sometime in the 1960s, so the name refers to the conceptual artwork "The Cybernetic Artwork that Nobody Broke" by Harold Hurrell (1969).

2.1 Running Cybernetic...

To run "Cybernetic", change to the directory rheart/cybernetic/ and run the file run.lisp there.

```
$ cd cybernetic
$ openmcl --load run.lisp
```

2.2 Sample Session

```
$ cd cybernetic
$ openmcl --load run.lisp
A large smooth pale pink outlined organic shape on a halftoned rich
cotton-coloured ground.
A tiny bright sky blue abstracted bird on a pale sea green ground.
A pair of massive halftoned pale non-repro blue outlined octagons on a
crosshatched rich platinum ground.
Many massive pale suede-coloured birds on a scumbled white ground.
A small brown horse on a pale cotton-coloured ground.
Some sunset red spiky shapes on a halftoned denim blue ground.
A large green spiky shape on a black ground.
A pair of small bright black pentagons on a pale pink ground.
A pair of rich purple outlined ships on a scumbled cyan ground.
Many massive crosshatched bright shocking pink irregular shapes on a smooth
rich leaf green ground.
```

3 ae

ae is a toy aesthetic evaluator. It generates simple descriptions of aesthetics, basically just a list of valenced criteria. It also generates descriptions of artworks consisting of a number of figures, each described by a list of valenced properties. It then evaluates artwork against aesthetic and gives the artwork a numeric score, a measure of its value under that aesthetic.

3.1 Precedents

I wrote ae before I'd read Gips and Stiny's "Algorithmic Aesthetics" (University of California Press, 1979 - `http://www.algorithmicaesthetics.org/`), but I was certainly inspired by the idea of the possibility of an algorithmic aesthetics.

The structure of ae's ontology, with specific concepts generalisable to more broader concepts, is inspired by Douglas Hofstadter and Melanie Mitchell's work on CopyCat, described in the book "Fluid Concepts and Creative Analogies".

3.2 Running ae

To run ae, change to the directory rheart/ae and run the file run.lisp there.

```
$ cd ae
$ openmcl --load run.lisp
```

4 Draw Something

Draw Something generates simple line drawings. It does this by generating a set or random points, finding their convex hull (smallest enclosing shape), and drawing around that. These stages are a very simple analogue to observational or constructive drawing.

4.1 Precedents

I was inspired to start on draw-something (and rheart as a whole) by Harold Cohen's program AARON. Ed Burton's ROSE and Kazushi Mukaiyuma's Shizuka, both also inspired by AARON, were influences as well.

4.2 Running Draw Something

To run ae, change to the directory rheart/draw-something and run the file run.lisp there.

```
$ cd draw-something
$ openmcl --load run.lisp
```

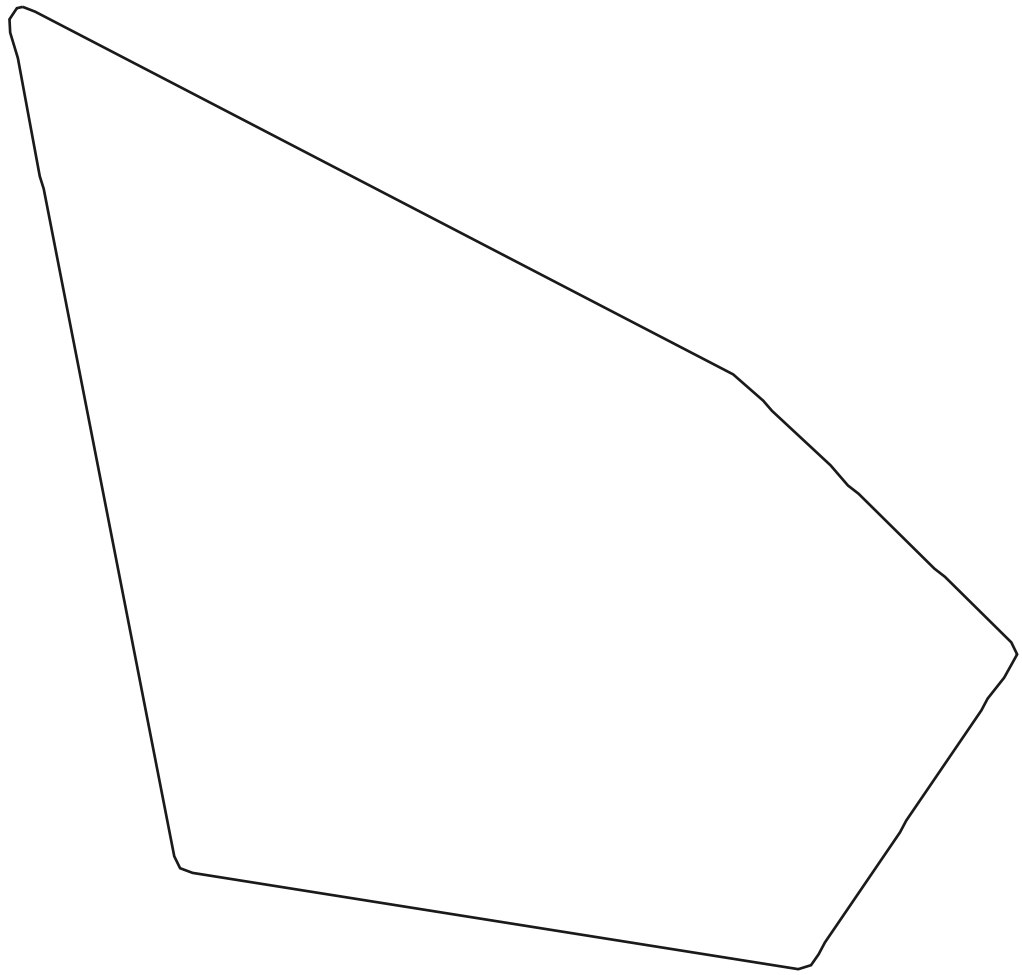
Draw Something will print messages describing its progress then write the files debug.ps and image.ps in its directory. image.ps is the finished drawing.

You can open both files with a PostScript viewer such as GhostView, MacOSX Preview can also open PostScript files.

4.3 A Sample Session

```
cd draw-something
openmcl --load run.lisp
Drawing something.
Generating skeleton.
Finished generating skeleton.
Generating convex hull.
Finished generating convex hull.
Drawing around convex hull.
```

4.4 Sample Image Output



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