

# **Interactive Evolutionary Computation**

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# Idea

- No mathematical or well defined computation to evaluate solutions.
- The optimization is based on the user's subjective evaluation.
- How? Based on impressions, emotions, or whatever preferences the user might have.

# Applications

- Evolving beautiful images (including beautiful people!)
- Finding criminal suspects.
- Evolving 3-D shapes.
- Evolving architectural designs.
- Evolving music.
- and many more...

# Early work

- Biomorphs (Richard Dawkins, 1987)
- 2-D images with GP (Karl Sims, 1991)
  - Image generated from a symbolic expression
  - Each pixel value computed based on that expression
- 3-D animated forms (Karl Sims, 1997)
- GenJam: generating Jazz solos (Al Biles, 1994)

## **More recent work**

- Picbreeder (Ken Stanley)
- Endlessforms (Jeff Clune)
- Darwin tunes (MacCallum)

# Live demos

- Check the links on the course webpage

# **Live demos**