Genetic Algorithms

CS 419/519

Demo 1: Mona Lisa
The power of randomization:
https://chriscummins.cc/s/genetics/

Demo 2: "Motorcycle"
Evolve a 2-d motorcycle to go as far as possible on a track
https://rednuht.org/genetic_cars_2/

Demo 3: Rockets
Evolve rockets to hit a target
http://www.blprnt.com/smartrockets/
Demo 4: Walkers

Evolve biped walkers

https://rednuht.org/genetic_walkers/

Demo 5: Mona Lisa (again)

Interesting take on evolving images

http://tanjacrijns.com/naturalcomputing/

Real-world Applications

The following appeared in results of a recent search:


Real-world Applications

The following appeared at GECCO 2019:

- Multiobjective shape design in a ventilation system with a preference-driven surrogate-assisted evolutionary algorithm.
- A novel hybrid scheme using genetic algorithms and deep learning for the reconstruction of Portuguese tile panels.
- Toward real-world vehicle placement optimization in round-trip carsharing.
- Evolving robust policies for community energy system management.
- Evolutionary approaches to dynamic earth observation satellites mission planning under uncertainty.
- Differential evolution based spatial filter optimization for brain-computer interface.
- Augmented evolutionary intelligence: Combining human and evolutionary design for water distribution network optimisation.