INTERNSHIP/THESIS OPPORTUNITIES AVAILABLE AT DISTRIBUTED INTELLIGENCE, OPTIMIZATION & LEARNING (DIOL) LAB

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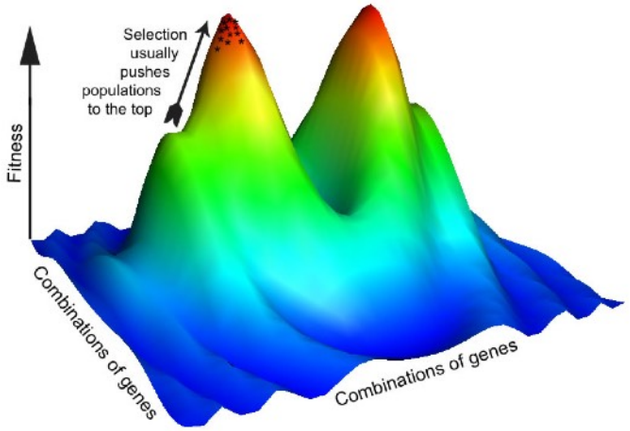
Distributed Intelligence, Optimization and Learning (DIOL) Lab

Nowadays, Artificial Intelligence is typically associated with Machine (Deep) Learning. However, modern AI includes also *other* techniques, variously inspired by natural phenomena, that can be used for solving an incredibly diverse range of real-world problems. Among these, in my lab we focus especially on Evolutionary Computation, inspired by Darwinian evolution, and Swarm Intelligence, inspired by collective behaviors of social animals.

Various student projects are available in the following areas:

- Co-evolutionary systems
  - co-evolution of morphology & brain
  - co-evolution of agents and environments
- Agent-based simulations
  - evolution of social behavior
  - evolution of communication
  - evolution of learning
- Applications
  - stochastic optimization
  - distributed systems
  - robotics



Example topics

- Hybrid systems for explainable AI
- Influence maximization in social networks
- Evolutionary design of network protocols
- Quality diversity algorithms
- Neural architecture search
- Co-evolution of morphology & control for soft robots
- Evolution of coordinated behaviors in collective tasks
- Learning under uncertain environments and rewards
- Evolutionary algorithms with Reinforcement Learning

… and much more!

Please feel free to contact me for further information:

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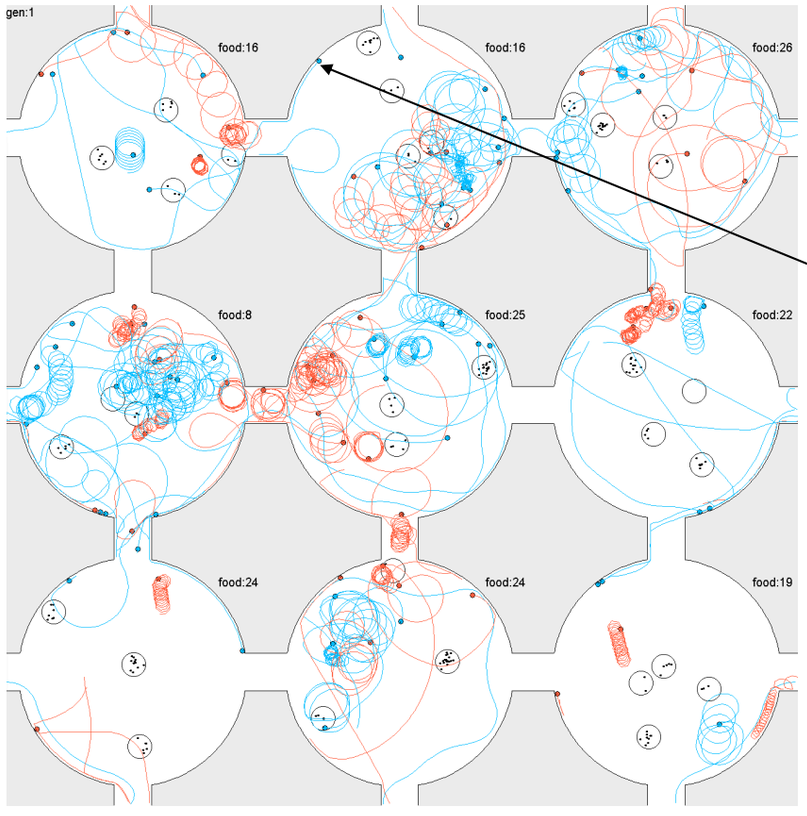

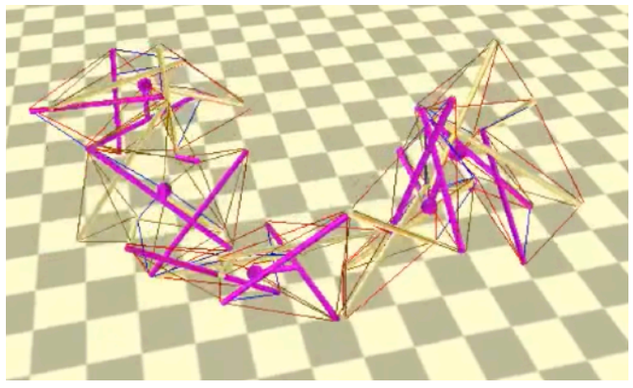

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Robot: 121321f5
Birth chamber: 10
Current chamber: 10
Previous chamber: 10
Corridor: null
Food patch: null
Food item: null
Life time: 149
Food time: 0
Theta: 93
Fitness: 3.75

Inputs -> Outputs
-1.000 0.000 1.000 1.000 0.000 1.000 0.238 1.000 0.000  -> 6.686 -0.035 1.000

Genome
01010010 10100000 01111001 01101111 11100100
10001110 11100011 11100000 11111100 00011111
00001101 00000100 11011000 10101001 00001010
00100000 11100001 10010010 00011000 11010001
11000010 10011000 10010011 11100000 11101110
11010111 01110110 11100100 10011111 11000010
00010000 00100111 01001101 11101010 00001110
10001000 01100110 11101101 00000110 11100000
00001011 11101001 00011010 01001011 01011111
00001000 10010011 11111000 00101011 00110000
10110001 11001010 01000000 10101110 01000001
10010000 01101101 11010100 00000111 00010100

Collected food: 0
Shared food: 0
Altruistic time: 149
Dispersal distance: 0.0
Dispersal length: 0.0
```