

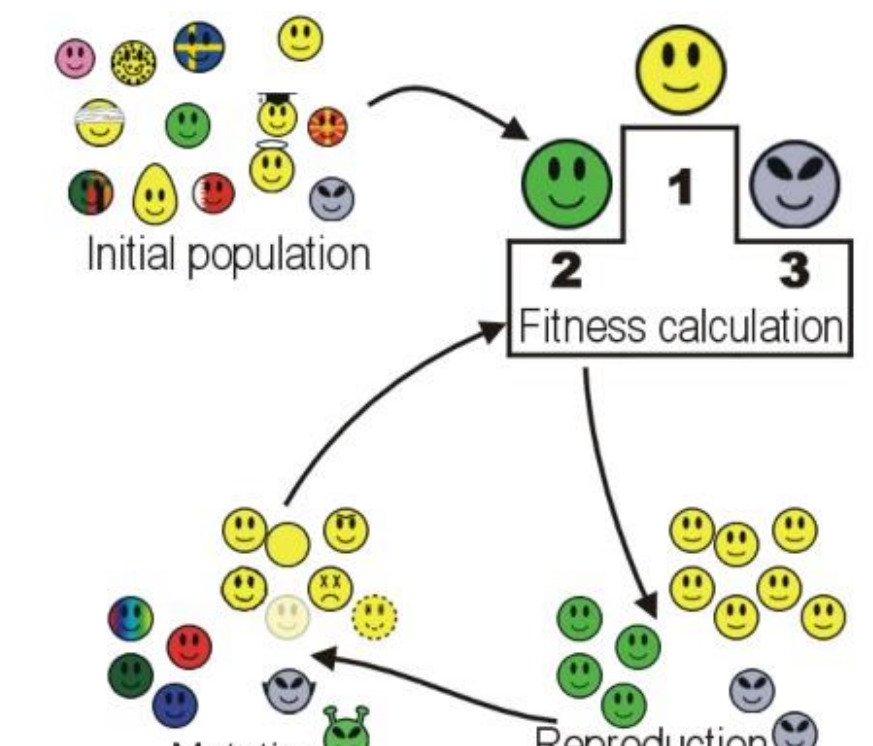
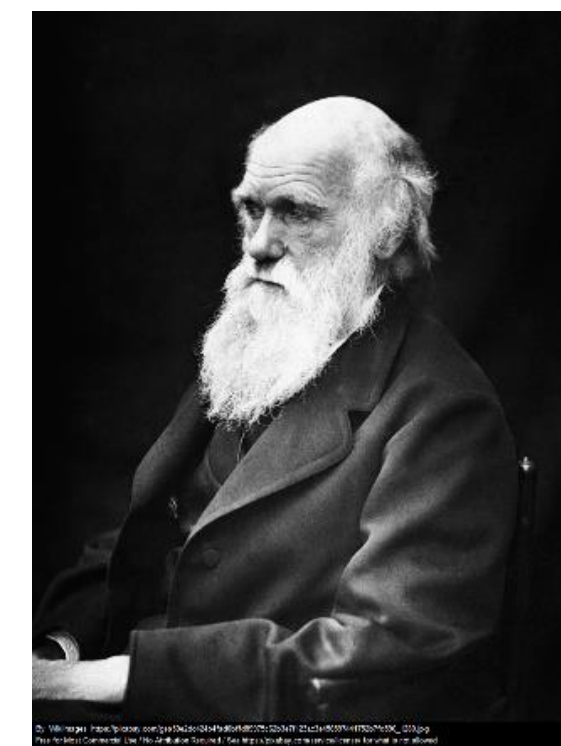
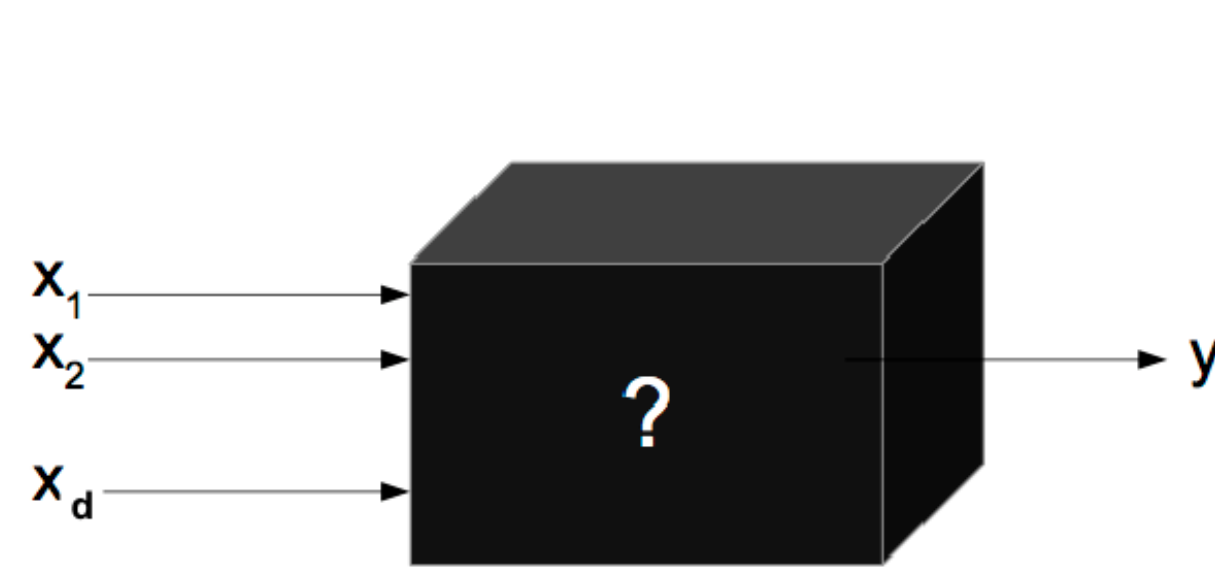
Bachelor Projects in Evolutionary Algorithms

Section for Algorithms, Logic and Graphs

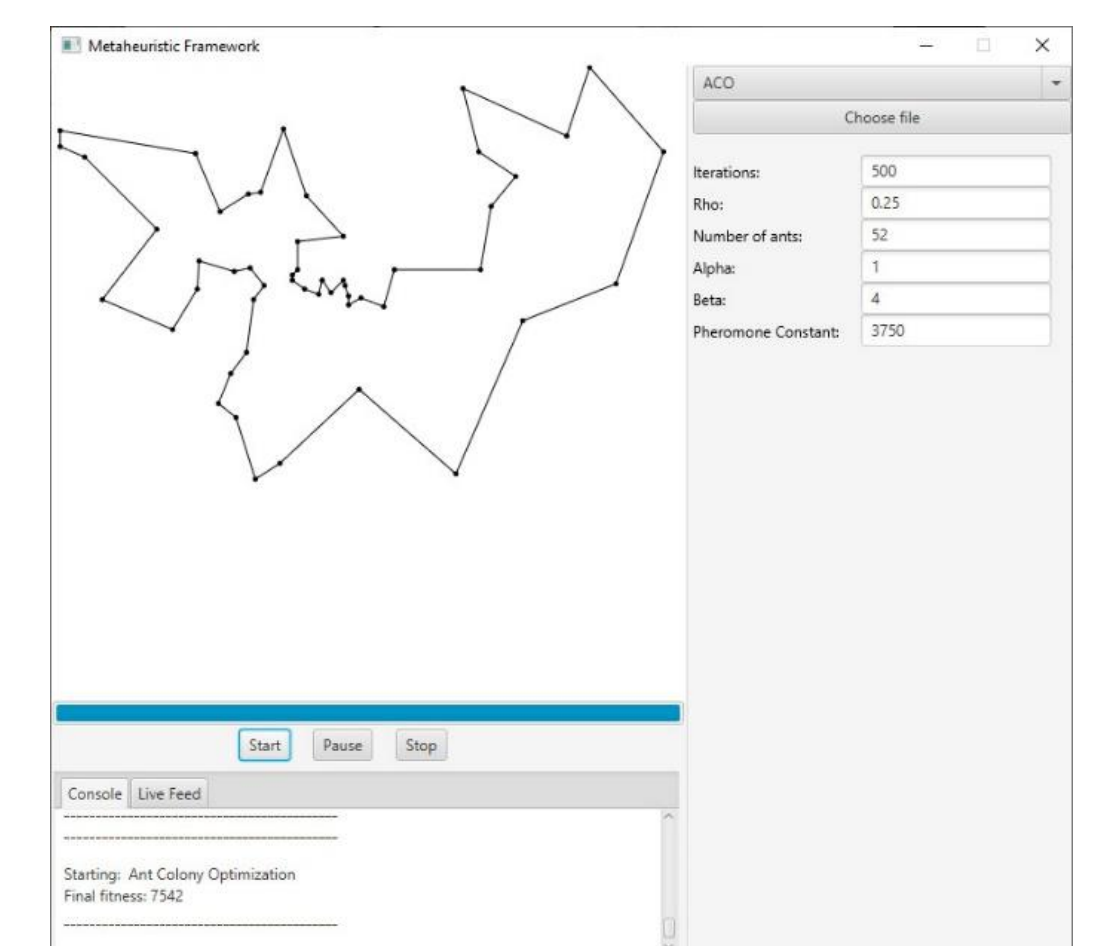
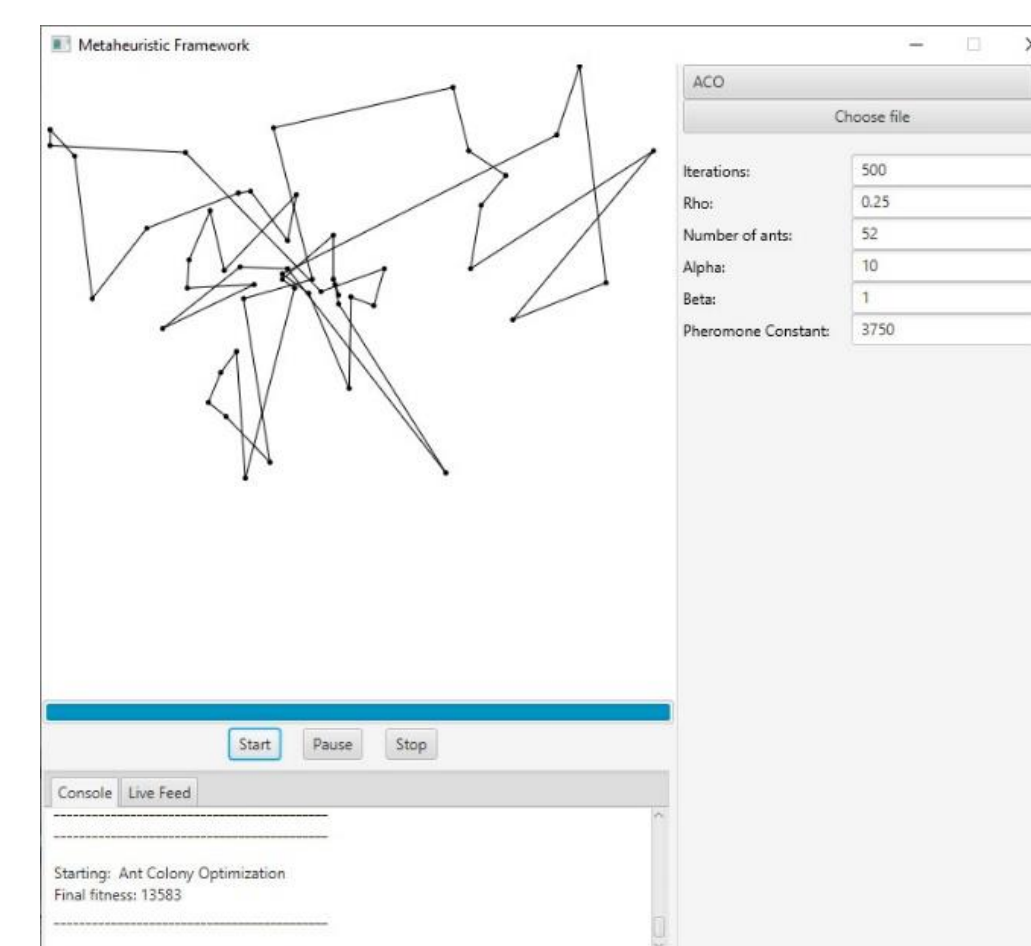
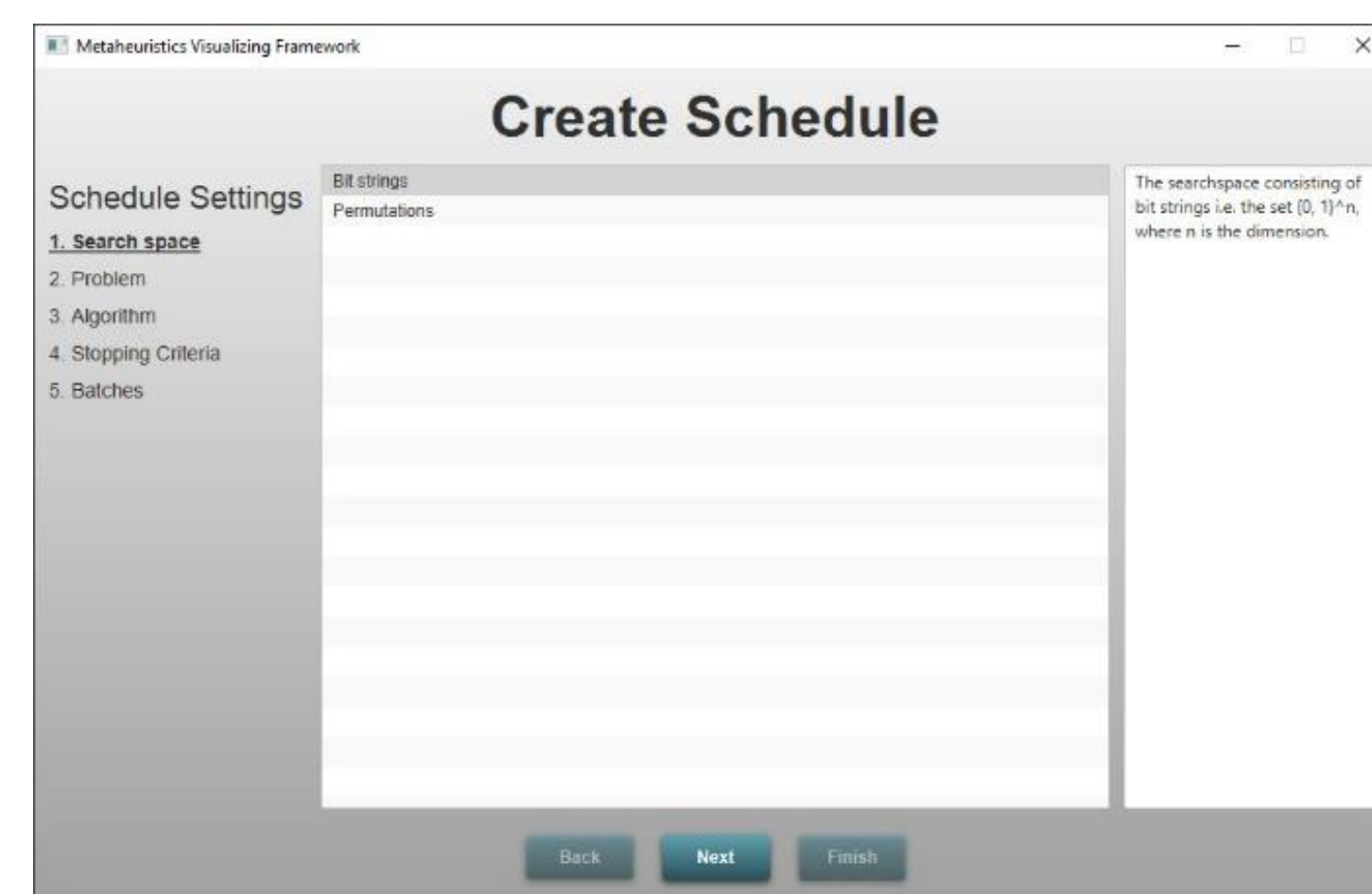
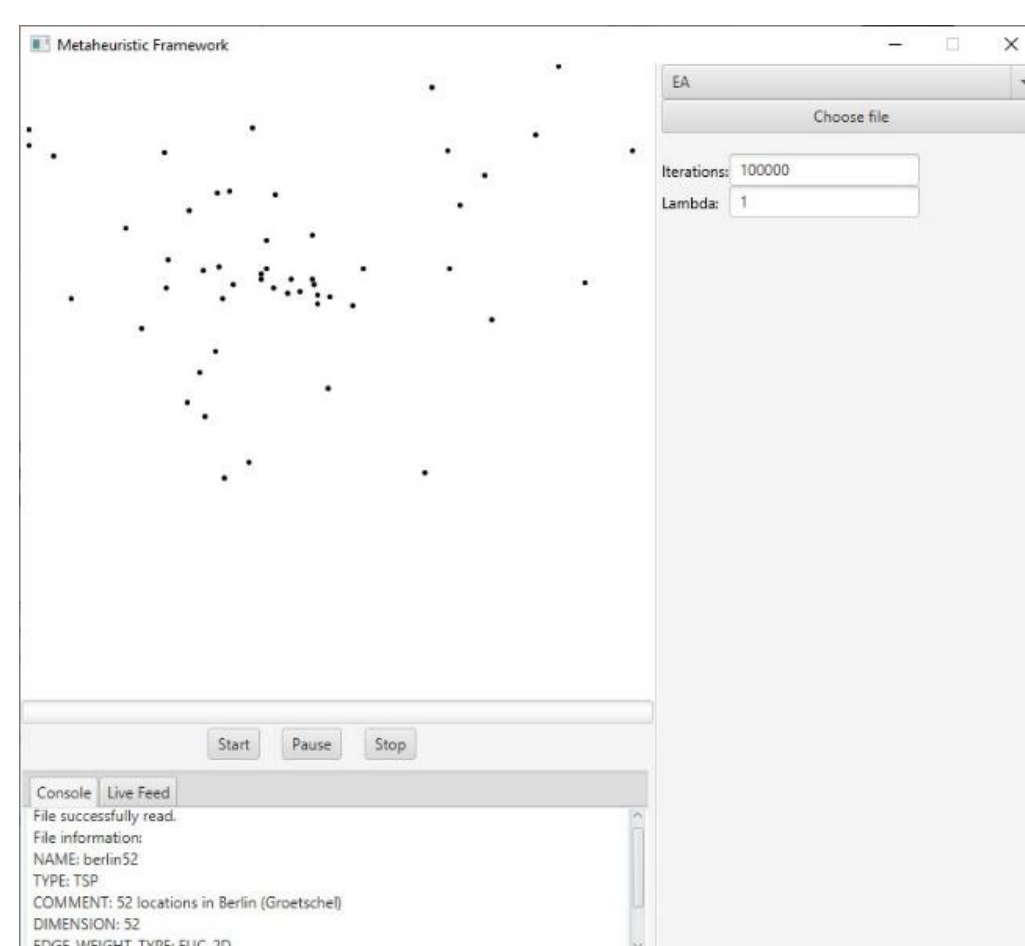
DTU Compute, October 2025

Frameworks for Evolutionary Algorithms and Heuristic Optimization

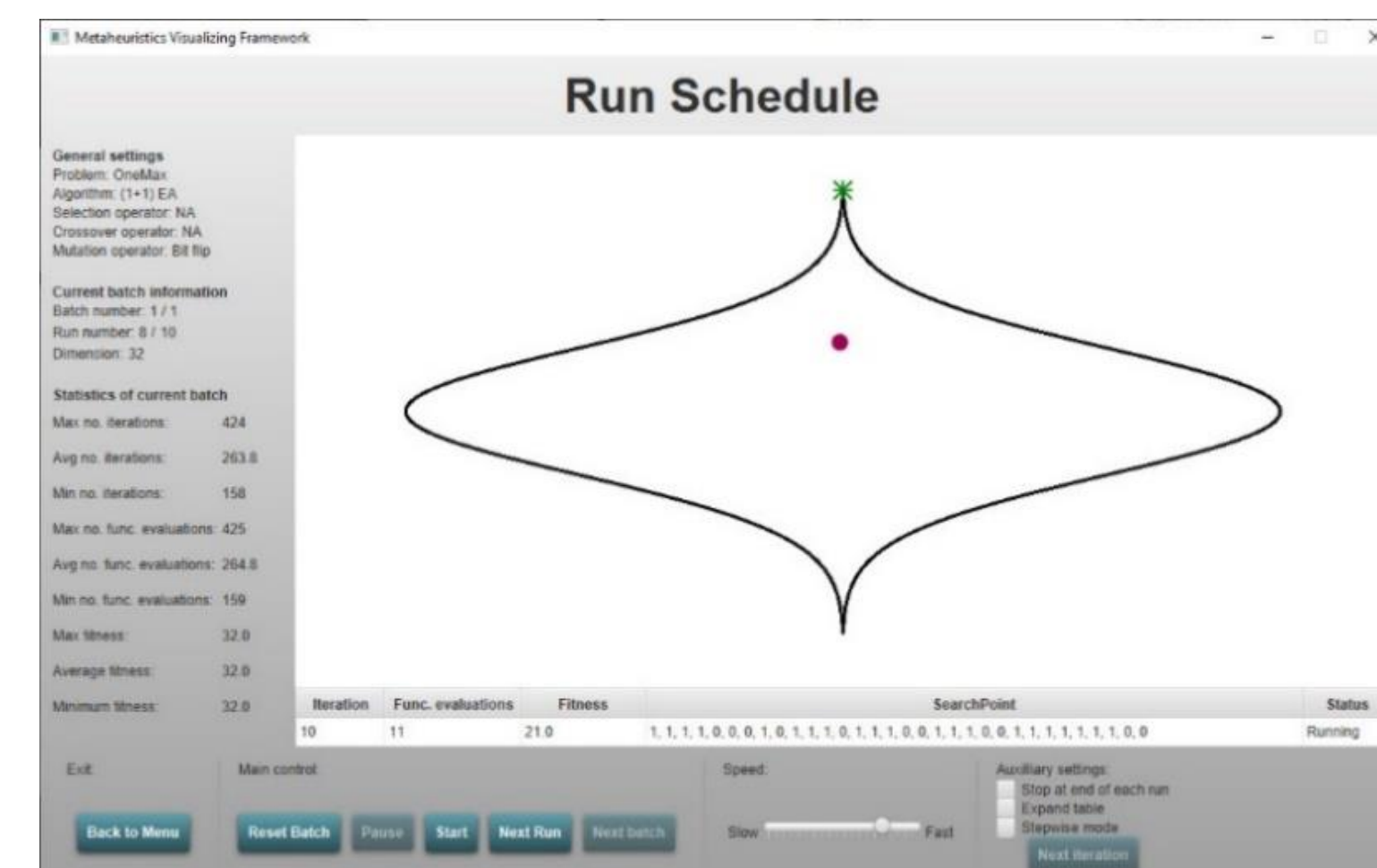
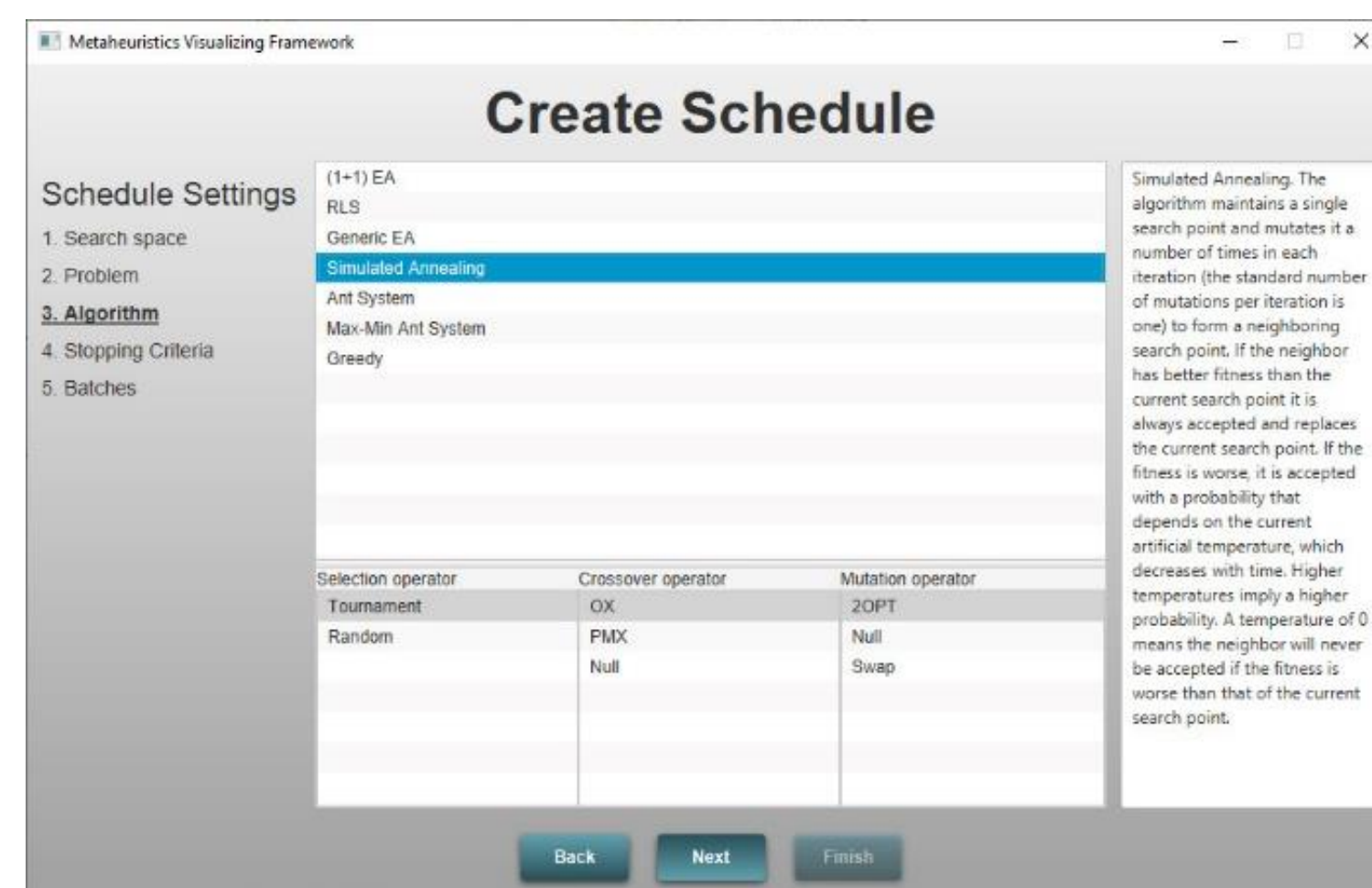
- Evolutionary Algorithms (EA) can solve hard optimization problems and general black-box optimization problems using bio-inspired search operators



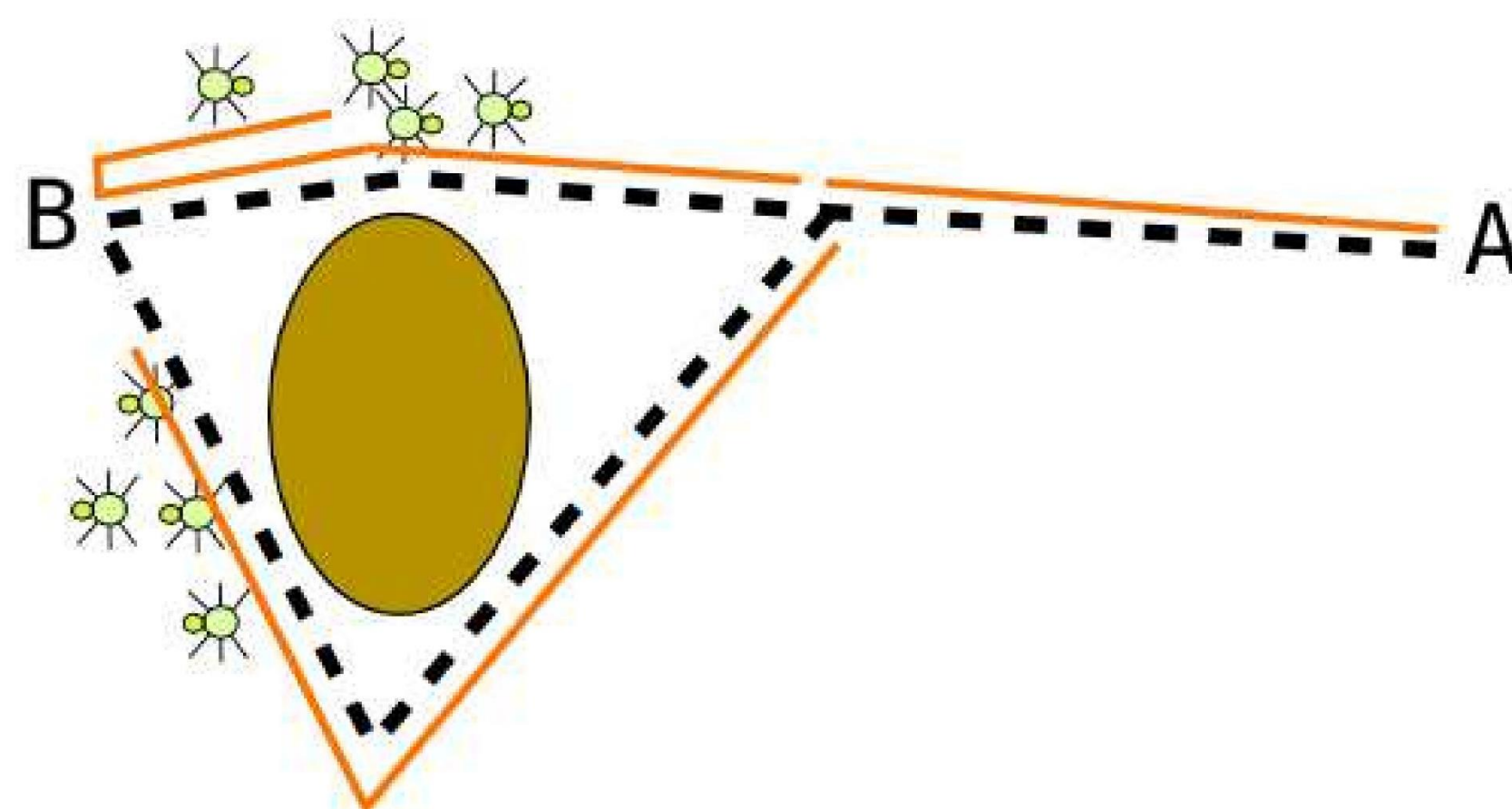
- Implement, visualize and compare EAs on benchmark problems on bit strings and permutation problems (e.g. TSP, vehicle routing)



- Develop an extensible framework for the implementation of and experimentation with different metaheuristics



- Add further heuristics such as Ant Colony Optimization and Simulated Annealing



- Extract statistical properties such as average running time, best-so-far fitness, ...
- Required background: basic knowledge in algorithms (preferably also in metaheuristics, e.g., from course 02249), GUI prog., and software engineering

- Contact: Carsten Witt (cawi@dtu.dk)