(Year of 2003-2004)

Possible Topics of Undergraduate Diploma Thesis

Akira Imada

(1) Biologically Inspired Approach to NP-hard Combinatorial Problems.

- Approach to NP-hard Combinatorial Problems like "Traveling Salesman Problem" or "Knap-sak Problem" by means of Genetic Algorithm or other Evolutionary Computation methodologies.

(2) Visualization of High-dimensional Space.

- We visualize high dimensional space, where we have "curse of dimensionality", by Principle Component Analysis, Kohonen's Self Organization Mapping and Summon Mapping using Evolutionary Computations.

(3) Evolutionary Approach to Prisoner's Dilemma

- Prisoner's Dilemma is a scenario often quoted in Game Theory. We find strategies of this game using Evolutionary Computations.