I-SE01

Fuzzy Logic Evolutionary Artificial Life and Intelligence Computation

15:20-17:20
Room : C105

Chair : Mignon Park (Yonsei Univ.)
Co-Chair : Parakash Edmond (Nanyang Technological Univ.)

15:20 – 15:40 **I-SE01-1**

New Boundary-Handling Techniques for Evolution Strategies

Han-Lim Choi, Min-Jea Tahk
(KAIST)

The evolution strategy is a good evolutionary algorithm to find the global optimum of a real-valued function. Since many engineering problems can be formulated as real-valued function optimization, the evolution strategy is frequently employed in engineering fields. However, in many engineering optimization problems, an optimization parameter is often restricted in the bounded region between two specified values, the minimum and the maximum limit, respectively. Since an offspring individual is generated randomly around a parent individual during mutation process of the evolution strategy, an individual outside the search region can be generated even if the parent is inside the search region. This paper proposes two new boundary-handling techniques for evolution strategies. One is the ...

15:40 – 16:00 **I-SE01-2**

New Mutation Rule for Evolutionary Programming Motivated from the Competitive Exclusion Principle in Ecology

Jung-Hwan Shin(Kyungpook Univ.), Doo-Hyun Choi(Seoul National Univ.), Sung-Il Chien(Kyungpook Univ.)

A number of previous researches in evolutionary algorithm are based on the study of facets we observe in natural evolution. The individuals of species in natural evolution occupy their own niche that is a subdivision of the habitat. This means that two species with the similar requirements cannot live together in the same niche. This is known as the competitive exclusion principle, i.e., complete competitors cannot coexist. In this paper, a new evolutionary programming algorithm adopting this concept is presented. Similarly in the case of natural evolution, the algorithm includes the concept of niche obtained by partitioning a search space and the competitive exclusion principle performed by migrating individuals. Cell partition and individual migration strategies are used to preserve search diversity as well as to speed up convergence of an ...

16:00 – 16:20 **I-SE01-3**

Character Animation of Realistic Humans

Edwina Quek, Lim Jun Pei, Lai Looi Seng, Cui Jing, Edmond C. Prakash, Edmund M-K. Lai (Nanyang Technological Univ.)

Animation of 3-dimensional humans is a challenging task, however, its realistic synthesis is possible. Essentially, the nature of this project is to demonstrate and study the difficulties faced by an animator in making a movie with a state of art computer animation software (Maya Software by Alias/Wavefront) by creating a movie clip with the above-stated software ourselves. We will also analyze the aspect of automated animation to relieve the animator of some very tedious tasks.