Final Project

Evolutionary Computation Based Novel Applications

Task 1: Topic of Interest
Propose a focused research topic to be approved by November 7, 2003. Appointment needs to be made to finalize the choice. No redundant topic will be assigned. The topic is given at first come first take basis.

Task 2: Literature Survey
Search literature that utilize the evolutionary computation for your research area of interest. Review the chosen set of articles with supported simulation studies and benchmark tests.

Task 3: Documentation
Complete a 6-page report on the chosen subject with elaborated justifications given the following structure (need not to be exactly). Please follow the IEEE format specified in the second page. The report is due on December 5, 2003.

- title, author and affiliation
- abstract/summary
- introduction with problem statement and motivations
  - (justification of using evolutionary computation)
- literature survey with identified deficiencies
- proposed novel idea or algorithm developed to remedy/improvement
- simulation/experimental validation
- conclusions and future research
- references

Candidate Application Domains
- Data Mining;
- Engineering Design;
- Bioinformatics;
- Process Designs;
- Financial & Economics;
- Mechatronics;
- Scheduling;
- Layout and Routing;
- Optimization;
- Chaos;
- Machine Vision;
- Sensor Fusion;
- Data/Model Visualization; and
- Implementation.
Confirmed Topics:
Daghan Acay- Rule Based Classifier Systems
Bashar Barrishi- Malicious Software Activities Detection
Jeff Cohea-
Moayed Daneshyari- Social Behavior Motivated Optimization
Bhaskaran Devaraj- Path Planning for Multiple Robots Using GA and SA
Leo Fonseca-
Michel Goldstein- GA for Optimization in Bipartite Graph Spaces
Joe Hershberger-
Harinarayan Iyer- Unit Commitment Problem Using GA
Xun Jin- MOEA Based Sustainability Design
Tasneem Kanpurwala- GA for Multi-objective Jobshop Scheduling
Zhuobin Li- Coevolution MOEA
Pedro de Lima- Evolutionary Learning of Hierarchical Decision Rules
Chris Matthes- Hibernation Operator in GA
Todd Parnian- Transmission Line Maintenance Scheduling
Lalitha Ramaswamy- Ant Colony Systems for Vehicle Routing Problems
Swakshar Ray-
Yoshihiko Saito- MOEA for Vehicle Routing Problems
Vijay Venkataraman- Evolutionary Games Theory for Scheduling Problems
Sanga Venkatraman- Constraint Handling in MOEAs
Chris White- Artificial Life in TSP
Chris Williams- Cultural MOEA
Weibo Zhang-
Mayuresh Kulkarni- Time-Optimal Control for a Two-Link Manipulator
Sai Venu Lolla-