

co-evolutionary simulations
Networks and Genetic Algorithms
Algorithms
and Mediocre Stable States
procedure
multi-constraint optimisation
(Birds-on-a-Feather Workshop, Genetic and Evolutionary Computation Conference)
Synthesis and Simulation of Living Systems.
Subcomponents
Algorithms
dynamics
and coevolutionary avalanches
optimization
dynamics

RoboCup97 and Marco Dorigo and David B. Fogel and Max H. Garzon and David E. Goldberg and Hitoshi Iba and Rick Riolo simulated soccer matches to demonstrate cooperative robotics techniques in a very difficult, real-time, noisy environment. At the IJCAI/RoboCup97 softbot competition, all entries but ours used human-crafted cooperative decision-making behaviors. We instead entered a softbot team whose high-level decision making behaviors had been entirely evolved using genetic programming. Our team won its first two games against human-crafted opponent teams, and received the RoboCup Scientific Challenge Award. This report discusses the issues we faced and the approach we took to use GP to evolve our robot soccer team for this difficult environment.

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