and Hitoshi Iba and Paul Marrow and Mark Shackleton

by Evolving Discriminatory DNA Motifs and Hitoshi Iba and Paul Marrow and Mark Shackleton

Algorithm Perspective and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

Network Design and Hitoshi Iba and Paul Marrow and Mark Shackleton

Algorithm Toolbox and Hitoshi Iba and Paul Marrow and Mark Shackleton

Primitive Operator Filters and Hitoshi Iba and Paul Marrow and Mark Shackleton

Linkage in the Dynamic Niche Clustering Framework and Hitoshi Iba and Paul Marrow and Mark Shackleton

Algorithms and Hitoshi Iba and Paul Marrow and Mark Shackleton competition often seen in society and biology. Subpopulations are stratified by fitness. Individuals move from low-fitness subpopulations to higher-fitness subpopulations if and only if they exceed the fitness-based admission threshold of the receiving subpopulation, but not of a higher one. HFC's balanced exploration and exploitation, while avoiding premature convergence, is shown on a genetic programming example.

and Hitoshi Iba and Paul Marrow and Mark Shackleton

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Similar Programs and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

Concentration Control and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

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and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

Messy GA and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

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and Hitoshi Iba and Paul Marrow and Mark Shackleton

Algorithms and Hitoshi Iba and Paul Marrow and Mark Shackleton

Algorithm and Hitoshi Iba and Paul Marrow and Mark Shackleton

(AB) Hybrid and Support Vector Machine Breast Cancer Classification Paradigms and Hitoshi Iba and Paul Marrow and Mark Shackleton

Signal Efficiency and Hitoshi Iba and Paul Marrow and Mark Shackleton

Anti-HIV Compounds and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

Landscapes and Hitoshi Iba and Paul Marrow and Mark Shackleton

Competition Based Selection and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton applications, for instance in robotics. The models are rendered using 3d graphics hardware and DirectX. Both artificial and real images were used to test the system. More than one target image can be used, allowing stereoscopic vision. These experiments present results of interesting generalization.

of a Genetic Programming approach and Hitoshi Iba and Paul Marrow and Mark Shackleton images based on Genetic Programming is introduced. The problem is faced in terms of unsupervised pixel classification. The system is tested on a multispectral image with 31 spectral bands and 256 by 256 pixels. A good quality clustered output image is obtained.

and Hitoshi Iba and Paul Marrow and Mark Shackleton

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and Hitoshi Iba and Paul Marrow and Mark Shackleton

Operator and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton applies a traditional genetic operator to an aborigine and a depth-dependent crossover to the immigrants according to their ages, which show how long they survive in the island.This method can provide both local and global search strategies. The experimental results have shown that our approach works effectively.

and Hitoshi Iba and Paul Marrow and Mark Shackleton in genetic programming. The proposed model incorporates a mechanism that is analogous to ballistic accretion in physics. The model indicates a four-region partition of GP search space. It further suggests that two of these regions are not searchable by GP.

and Hitoshi Iba and Paul Marrow and Mark Shackleton

Its Hardware Prototyping and Application to the Splicing Boundary Problem and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton expression of thousands of genes in parallel. Analysis of such data can provide understanding and insight into gene function and regulatory mechanisms, and open a new gate to tissue classification. Since the first work of Golub et al in cancer classification based on gene expression profile rather than on morphological appearance of the tumor, there are several endeavors have been made on this direction. However, these tasks are made more difficult due to the noisy nature of array data and the overwhelming number of genes. In this paper, we propose a solution to the problem of gene selection using a multiobjective evolutionary algorithm (MOEA). Results from experiments with benchmarking data sets are also given.

Algorithm and Hitoshi Iba and Paul Marrow and Mark Shackleton important problems in molecular biology. Nuclear Magnetic Resonance (NMR) spectroscopy is one of the promising techniques capable of determining the three-dimensional structures of proteins at atomic resolution. In determining protein structures by using NMR spectroscopy, Nuclear Overhauser Effect (NOE) signal assignment is the most laborious and time-consuming process. Attempts to automate the NOE signal assignment have failed so far. In this paper, we propose a new automatic assignment method of NOE signals based on a real-coded genetic algorithm and examine its effectiveness by applying it to determining the structure of a aa aa -helix, which is a well-known common substructure of proteins, and a protein called HMG2B.

and Hitoshi Iba and Paul Marrow and Mark Shackleton sum-of-pairs multiple protein sequence alignment. The method is based on a multiple population GENITOR-type GA and involves local search heuristics. It is then extended to parallel to exploit the benefit of multiprocessor system. Benchmarks from the BAliBASE library are used to validate the method.

and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton (GNP) was proposed recently. In this paper, an online learning method for GNP is proposed. This method uses Q learning to improve its state transition rules so that it can make GNP adapt to the dynamic environments efficiently.

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History of Search with Test of Estimation and Hitoshi Iba and Paul Marrow and Mark Shackleton

Set Problem and Hitoshi Iba and Paul Marrow and Mark Shackleton

Search and Hitoshi Iba and Paul Marrow and Mark Shackleton

Environments and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

Optimization and Hitoshi Iba and Paul Marrow and Mark Shackleton

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and Hitoshi Iba and Paul Marrow and Mark Shackleton

of Complex Problems and Hitoshi Iba and Paul Marrow and Mark Shackleton

Algorithm and Hitoshi Iba and Paul Marrow and Mark Shackleton

Optimization and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

Discretization of Continuous Systems and Hitoshi Iba and Paul Marrow and Mark Shackleton

Simulated Annealing and Hitoshi Iba and Paul Marrow and Mark Shackleton

Capacities (MECs) of a New Neural Net Model for a Second Generation Brain Building Machine BM2 and Hitoshi Iba and Paul Marrow and Mark Shackleton

Fitness Landscape and Hitoshi Iba and Paul Marrow and Mark Shackleton

in an Evolutionary Autonomous Navigation System and Hitoshi Iba and Paul Marrow and Mark Shackleton

problem and Hitoshi Iba and Paul Marrow and Mark Shackleton

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and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

with Obstacles and Hitoshi Iba and Paul Marrow and Mark Shackleton

Routing and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

Management and Hitoshi Iba and Paul Marrow and Mark Shackleton

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Spanning Tree-based Genetic Algorithm with Fuzzy Logic Controller and Hitoshi Iba and Paul Marrow and Mark Shackleton

Recurrent Dynamic Constraint Satisfaction and Hitoshi Iba and Paul Marrow and Mark Shackleton

Strategies and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

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and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton practice in performing and documenting experimental research in EC. We identify some crucial problems and the limitations of this practice, and elaborate on research directions that should be pursued to improve the quality and relevance of experimental research.

5 and Hitoshi Iba and Paul Marrow and Mark Shackleton

Genetic Algorithm and Hitoshi Iba and Paul Marrow and Mark Shackleton

assimilation of acquired traits and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

Architectures and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton mobile robots using genetic algorithms are investigated. The Khepera robot is trained using the evolutionary neural networks (ENN) algorithm for the task of obstacle avoidance. The feasibility of using Q-learning for robot learning is also studied. It is found that Q-learning can be successfully used to train a robot and is more promising than the ENN algorithm on this case. The Webots simulation software has been used to carry out all the experiments.

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Genetic Algorithms for Designing Fuzzy Rule-based Classification Systems and Hitoshi Iba and Paul Marrow and Mark Shackleton

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Space and Hitoshi Iba and Paul Marrow and Mark Shackleton

Management and Hitoshi Iba and Paul Marrow and Mark Shackleton

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and Hitoshi Iba and Paul Marrow and Mark Shackleton
Detection and Hitoshi Iba and Paul Marrow and Mark Shackleton
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and Hitoshi Iba and Paul Marrow and Mark Shackleton
Example and Hitoshi Iba and Paul Marrow and Mark Shackleton
and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton evolution process through the employment of a population and a belief space. Here, the Cultural approach is applied to derive a generalized set of beliefs from successive populations of parameter configurations from an agent-based simulation of transactions within a durable goods market. The maintenance of this information allows for the guided evolution of the agent-based system over successive simulations. In order to more effectively evaluate parameter configurations, Software Engineering techniques of white and black box testing are applied. In this paper, a methodology for the use of Cultural Algorithms to optimize strategies in agent-based models is presented. This approach is demonstrated in an application used to model pricing strategies in the context of an agent-based model under a simulated real-world market scenario and a heterogeneous population.

and Hitoshi Iba and Paul Marrow and Mark Shackleton
Nonlinear Circuits and Hitoshi Iba and Paul Marrow and Mark Shackleton
Algorithm and Hitoshi Iba and Paul Marrow and Mark Shackleton
and Hitoshi Iba and Paul Marrow and Mark Shackleton
Genetic Algorithm and Hitoshi Iba and Paul Marrow and Mark Shackleton
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and Hitoshi Iba and Paul Marrow and Mark Shackleton

Constraints in Genetic Algorithms: Preliminary Results and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton
and Hitoshi Iba and Paul Marrow and Mark Shackleton
Optimization Problems and Hitoshi Iba and Paul Marrow and Mark Shackleton
and Hitoshi Iba and Paul Marrow and Mark Shackleton
Environmental Poisoning and Hitoshi Iba and Paul Marrow and Mark Shackleton

DLMS Manufacturing Process System at Ford Motor Company and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton
Behavior and Hitoshi Iba and Paul Marrow and Mark Shackleton
Constrained Optimization Problems and Hitoshi Iba and Paul Marrow and Mark Shackleton
CSPs and Hitoshi Iba and Paul Marrow and Mark Shackleton
and Hitoshi Iba and Paul Marrow and Mark Shackleton
and Hitoshi Iba and Paul Marrow and Mark Shackleton

Neural Networks, and Support Vector Machines and Hitoshi Iba and Paul Marrow and Mark Shackleton of three key computational intelligence approaches (genetic programming, analytical neural networks, and support vector machines) is proposed. The advantages of this type of soft sensors are their good generalization capabilities, increased robustness, explicit input/output relationships, self-assessment capabilities, and low implementation and maintenance cost.

Number Recognition and Hitoshi Iba and Paul Marrow and Mark Shackleton
computation and Hitoshi Iba and Paul Marrow and Mark Shackleton
and Hitoshi Iba and Paul Marrow and Mark Shackleton
and Hitoshi Iba and Paul Marrow and Mark Shackleton
and Hitoshi Iba and Paul Marrow and Mark Shackleton

Artificial Immune Algorithm-Based Bankruptcy Prediction System and Hitoshi Iba and Paul Marrow and Mark Shackleton

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and Hitoshi Iba and Paul Marrow and Mark Shackleton

Local Search and Hitoshi Iba and Paul Marrow and Mark Shackleton

Evolutionary Algorithm and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

Multi-Stage Evolution and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton which enables the evolution of variable length solutions whilst preserving local context. This paper introduces the model and presents an analysis of crossover and the evolution of program size.

and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton algorithm is proposed for attitude determination via the GPS carrier phase observables. The technique overcomes restrictions due to computational overheads incurred by existing techniques such as the Ambiguity Function Method. We present experimental results which show that the algorithm is able to efficiently search the complex search space imposed by the problem in addition to being immune to cycle slips compared to other conventional methods.

Objects from Boundary Displacement Measurements and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

Investigation of Dynamic Clonal Selection and Hitoshi Iba and Paul Marrow and Mark Shackleton

Artificial Immune Network and Hitoshi Iba and Paul Marrow and Mark Shackleton

Detection and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

Algorithm and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton to optimization, model identification, and control in power systems [1]. Due to space limitation, all reviewed papers have been selected since 1996, from the IEEE Transactions only. A total of 85 articles are listed in this survey. It shows the development of the area and identifies the current trends. The following techniques are considered under the scope of evolutionary computation: evolutionary algorithms (e.g., genetic algorithms, evolution strategies, evolutionary programming, and genetic programming), simulated annealing, tabu search, and particle swarm optimization.

and Hitoshi Iba and Paul Marrow and Mark Shackleton

Plant Control System Design and Hitoshi Iba and Paul Marrow and Mark Shackleton

Network Inversion: An Overview and Hitoshi Iba and Paul Marrow and Mark Shackleton

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Occluded Articulated Objects and Hitoshi Iba and Paul Marrow and Mark Shackleton

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Evolutionary Algorithm Performance Measurement and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

Flow-Shop Scheduling Problem and Hitoshi Iba and Paul Marrow and Mark Shackleton

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Resuisite Variety and Hitoshi Iba and Paul Marrow and Mark Shackleton

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and Hitoshi Iba and Paul Marrow and Mark Shackleton
and Hitoshi Iba and Paul Marrow and Mark Shackleton
Scheduling Problem and Hitoshi Iba and Paul Marrow and Mark Shackleton
Big Differences and Hitoshi Iba and Paul Marrow and Mark Shackleton
and Hitoshi Iba and Paul Marrow and Mark Shackleton
Covering Problem and Hitoshi Iba and Paul Marrow and Mark Shackleton
and Hitoshi Iba and Paul Marrow and Mark Shackleton
Spatial Interaction Flows and Hitoshi Iba and Paul Marrow and Mark Shackleton
Data and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton mining relational databases. This system uses Grammar Genetic Programming for classification task and one of its main features is the representation of the classifiers. The system uses SQL grammar, which facilitates the evaluation process, once the data are in relational databases. The tool was tested with some databases and the results were compared with other algorithms. These first experiments had shown promising results for the classification task.

Interfered Motion and Nonlinear Friction and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton unsupervised classification of patterns. The formation of clusters is based on the principle of maximizing the similarity between objects of the same cluster while simultaneously minimizing the similarity between objects belonging to distinct clusters. This paper presents a tool for database clustering using a rule-based genetic algorithm (RBCGA). RBCGA evolves individuals consisting of a fixed set of clustering rules, where each rule includes d non-binary intervals, one for each feature. The investigations attempt to alleviate certain drawbacks related to the classical minimization of square-error criterion by suggesting a flexible fitness function which takes into consideration, cluster asymmetry, density, coverage and homogeny.

SideScan Sonars and Hitoshi Iba and Paul Marrow and Mark Shackleton
and Hitoshi Iba and Paul Marrow and Mark Shackleton
and Hitoshi Iba and Paul Marrow and Mark Shackleton

Nonslicing VLSI Floorplans With Soft Modules and Hitoshi Iba and Paul Marrow and Mark Shackleton

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and Hitoshi Iba and Paul Marrow and Mark Shackleton
and Hitoshi Iba and Paul Marrow and Mark Shackleton
Mechanisms and Hitoshi Iba and Paul Marrow and Mark Shackleton
and Hitoshi Iba and Paul Marrow and Mark Shackleton

programming and Hitoshi Iba and Paul Marrow and Mark Shackleton with classification task in data mining. This work extends the tree representation of GP to evolve multiple comprehensible IF-THEN classification rules. In the paper, we introduce a concept mapping technique for fitness evaluation of individuals. A covering algorithm that employs an artificial immune system-like memory vector is utilized to produce multiple rules as well as to remove redundant rules. The proposed GP classifier is validated upon nine benchmark datasets and the simulation results confirm the viability and effectiveness of the GP approach for solving data mining problems in a wide spectrum of application domains.

Programming Optimizer and Neuro-Fuzzy Identifier and Hitoshi Iba and Paul Marrow and Mark Shackleton

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and Hitoshi Iba and Paul Marrow and Mark Shackleton

Genetic Programming: The Comparative Results and Hitoshi Iba and Paul Marrow and Mark Shackleton programming [6] (TAG3P) on the symbolic regression problem, a benchmark problem in genetic programming. We compare the results with genetic programming [9] (GP) and grammar guided genetic programming [14] (GGGP). The results show that TAG3P significantly outperforms GP and GGGP on the target functions attempted in terms of probability of success. Moreover, TAG3P still performed well when the structural complexity of the target function was scaled up.

Genetic Algorithms and Hitoshi Iba and Paul Marrow and Mark Shackleton
and Hitoshi Iba and Paul Marrow and Mark Shackleton
and Hitoshi Iba and Paul Marrow and Mark Shackleton
and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton increase efficiency. We claim that the basis of self-adaptation is the use of neutrality. In the absence of external control neutrality allows a variation of the search distribution without the risk of fitness loss.

and Hitoshi Iba and Paul Marrow and Mark Shackleton used in the context of a real-world application. Previous studies have suggested that a redundant mapping, which introduces neutrality into the search space, can provide a beneficial role. Many of the studies to date have concentrated on relatively abstract search spaces. In this paper we consider these issues in the context of a specific real-world application. We show that redundancy can indeed be useful, but that it must be carefully introduced with due consideration to details of the application being considered, and its associated search space. Although the details of the redundant encoding are specific to the application, we seek to deduce some heuristics that are likely to prove useful for designing genetic encodings for other problems to facilitate search for fitter phenotypes.

and Hitoshi Iba and Paul Marrow and Mark Shackleton

Diviplication and Subdition and Hitoshi Iba and Paul Marrow and Mark Shackleton the search space in Genetic Programming (GP). Smooth operator GP interpolates between arithmetic operators such as times and divide, thereby allowing a gradual adaptation to the problem. The suggested approach is compared to traditional GP on a system identification problem.

Membership Functions and Intelligent Genetic Algorithms and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

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Analyzers and Hitoshi Iba and Paul Marrow and Mark Shackleton

Plant - Applying Bayesian Optimization Algorithm with Tabu Search and Hitoshi Iba and Paul Marrow and Mark Shackleton

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improves coevolutionary optimization and Hitoshi Iba and Paul Marrow and Mark Shackleton

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Dispatch Problem and Hitoshi Iba and Paul Marrow and Mark Shackleton

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and Hitoshi Iba and Paul Marrow and Mark Shackleton

Genetic Algorithms and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton including memories and peripherals. The test of these devices is becoming a major issue for manufacturing industries. This paper presents a methodology for inducing test-programs similar to genetic programming. However, it includes the ability to explicitly specify registers and resorts to directed acyclic graphs instead of trees. Moreover, it exploits a database containing the assembly-level semantic associated to each graph node. This approach is extremely efficient and versatile: candidate solutions are translated into source-code programs allowing millions of evaluations per second. The proposed approach is extremely versatile: the macro library allows easily changing target processor and environment. The approach was verified on three processors with different instruction sets, different formalisms and different conventions. A complete set of experiments on a test function are also reported for the SPARC processor.

Arithmetic Circuits and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

Control Problems in a Hysteresis System and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton evolving according to two levels of change called dynamics and metadynamics. The dynamics is the evolution in time of the concentration of the units currently present in the networks: the genetic, the molecular or the immune species. Their concentration evolves as a function of their network interaction with the other units. However, this evolution is also a function of their "exogenous"fitness so that the fitter units should in principle grow faster than the others. The metadynamics is the only way for innovation, and amounts to the generation

of new units on the basis of the genetic or chemical materials constituting the units existing so far in the network. This metadynamics, indirectly subject to the exogenous pressure, tends to selectively favor units that are easier to produce from the existing ones. For instance, the genetic recombination of two species could occur between species presenting particular similar properties and thus generating new species merging these properties. This metadynamics also greatly influences the concentration of the units present in the network. The paper will experimentally show, on chemical, genetic and immune networks, that the interaction between these two levels of change, together with the intricate balance between the "exogenous"and the "network endogenous"selective drift, can induce a hard-to-predict concentration profile, subject to discontinuous changes.

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Patterns in Networks and Hitoshi Iba and Paul Marrow and Mark Shackleton

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pheromone representations and Hitoshi Iba and Paul Marrow and Mark Shackleton

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and Hitoshi Iba and Paul Marrow and Mark Shackleton

signaling and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

to the iterated prisoner's dilemma and Hitoshi Iba and Paul Marrow and Mark Shackleton

Algorithms and Hitoshi Iba and Paul Marrow and Mark Shackleton

Attacks and Hitoshi Iba and Paul Marrow and Mark Shackleton

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and Hitoshi Iba and Paul Marrow and Mark Shackleton

Systems and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

Optimization and Hitoshi Iba and Paul Marrow and Mark Shackleton

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Optimization and Hitoshi Iba and Paul Marrow and Mark Shackleton

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in Coarse-Grained Parallel Genetic Algorithms and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

Algorithm and Hitoshi Iba and Paul Marrow and Mark Shackleton

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and Hitoshi Iba and Paul Marrow and Mark Shackleton

Programs' Length Evolution and Hitoshi Iba and Paul Marrow and Mark Shackleton and their relationships with the bloat phenomenon. The experiments that we have performed have also allowed us to find an interesting link between the number of processes, subpopulations and the model we should use when applying parallelism to GP. We study the synchronous and asynchronous version of the island-model in GP domain.

and Hitoshi Iba and Paul Marrow and Mark Shackleton

Hybrid Branch Prediction Method Using Switch-Counter and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton

University Modules and Hitoshi Iba and Paul Marrow and Mark Shackleton

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Algorithm Solutions and Hitoshi Iba and Paul Marrow and Mark Shackleton

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and Hitoshi Iba and Paul Marrow and Mark Shackleton
Algorithm and Hitoshi Iba and Paul Marrow and Mark Shackleton
and Hitoshi Iba and Paul Marrow and Mark Shackleton
During Cold Load Pickup and Hitoshi Iba and Paul Marrow and Mark Shackleton
Plasma Spectroscopy and Hitoshi Iba and Paul Marrow and Mark Shackleton
Coverage of ASICs Using Adaptation of the Fitness Criteria and Hitoshi Iba and Paul Marrow and Mark Shackleton

and Hitoshi Iba and Paul Marrow and Mark Shackleton analog circuits as well as for adaptation and automatic reconfiguration of programmable devices. In particular, EAs facilitate the design of analog circuits for very specific requirements, such as those related to the implementation of fuzzy operators, or even of complete fuzzy systems. The paper starts with a brief overview of the evolutionary process applied to circuit design and of a family of analog programmable devices that support on-chip evolution. As a case study, we describe the evolutionary design of a fuzzy controller, using re-configurable analog chips models and unstructured representation. We were able to achieve a circuit that approximates the control surface of a 2-input fuzzy controller, mapping thus a full fuzzy system in only seven transistors. The paper presents evidence that EA can provide very compact soluti ons for implementation of fuzzy systems, and that programmable analog devices are an efficient and rapid solution for rapid deployment of fuzzy systems.

Sensors and Hitoshi Iba and Paul Marrow and Mark Shackleton
Models and Hitoshi Iba and Paul Marrow and Mark Shackleton
Strategies and Hitoshi Iba and Paul Marrow and Mark Shackleton
Networks and Hitoshi Iba and Paul Marrow and Mark Shackleton
Motors by Genetic Algorithm and Hitoshi Iba and Paul Marrow and Mark Shackleton
and Hitoshi Iba and Paul Marrow and Mark Shackleton
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and Hitoshi Iba and Paul Marrow and Mark Shackleton represented as a type of graph. This paper proposes that the problem of evolving spring-mass models for a set of design challenges makes an excellent test-bed for evaluating the performance of various graph encoding schemes. We describe how the problem is set up, and intro-duce a planar graph coding scheme. Results demonstrate that the planar graph encoding scheme significantly out-performs a simple direct encoding scheme on a height-challenge design problem.

Global Optima for the Error-Correcting Graph Isomorphism and Hitoshi Iba and Paul Marrow and Mark Shackleton
Localization and Genetic Algorithm and Hitoshi Iba and Paul Marrow and Mark Shackleton
and Hitoshi Iba and Paul Marrow and Mark Shackleton
networks and Hitoshi Iba and Paul Marrow and Mark Shackleton
Fuzzy Controllers and Hitoshi Iba and Paul Marrow and Mark Shackleton
Networks and Evolved Rulesets and Hitoshi Iba and Paul Marrow and Mark Shackleton

Pain-based Algorithm and Hitoshi Iba and Paul Marrow and Mark Shackleton
Algorithm and Hitoshi Iba and Paul Marrow and Mark Shackleton
and Hitoshi Iba and Paul Marrow and Mark Shackleton different quotes on financial securities as input in order to evolve an intraday trading strategy for an individual stock, attempting to outperform a simple buy and hold strategy over the same period of time.
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Series and Hitoshi Iba and Paul Marrow and Mark Shackleton
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