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using Learning Classifier Systems EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

Acetylation and Methylation Areas in DNA Sequences EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

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Search EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

Interconnection Networks EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

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EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

Genetic Algorithm EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi circuits. Unfortunately, the most commonly used kind of BDDs ? ordered BDDs ? has exponential size in the number of variables for many functions. In some cases, more general forms of BDDs are more compact. In contrast to the minimisation of OBDDs, which is well understood, there are no heuristics for the construction of compact BDDs up to today. In this paper we show that compact BDDs can be constructed using Genetic Programming.

Inversion EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

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Gate Level EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

Genetic Algorithm and Genetic Programming EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi of an automatic fingerprint identification system (AFIS). The recognition engine within the original system functions by transforming the input fingerprint into a feature vector or finger code using a Gabor filter bank and attempting to create the best match between the input fingercode and

the database fingercodes. A decision to either accept or reject the input fingerprint is then carried out based upon whether the norm of the difference between the input fingercode and the best-matching database fingercode is within the threshold or not. The efficacy of the system is in general determined from the combined true acceptance and true rejection rates. In this investigation, a genetic algorithm is applied during the pruning of the fingercode while the search by genetic programming is executed for the purpose of creating a mathematical function that can be used as an alternative to the norm operator. The results indicate that with the use of both genetic algorithm and genetic programming the system performance has improved significantly.

Enhancement EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

Classifier EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

Evolution EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

Ultrasound Image Analysis EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

by means of Evolution Strategies EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

Particle Swarm Optimization EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi detection of rhythmic stress in spoken New Zealand English. A linear-structured GP system uses speaker independent prosodic features and vowel quality features as terminals to classify each vowel segment as stressed or unstressed. Error rate is used as the fitness function. In addition to the standard four arithmetic operators, this approach also uses several other arithmetic, trigonometric, and conditional functions in the function set. The approach is evaluated on 60 female adult utterances with 703 vowels and a maximum accuracy of 92.61 compared with decision trees (DT) and support vector machines (SVM). The results suggest that, on our data set, GP outperforms DT and SVM for stress detection, and GP has stronger automatic feature selection capability than DT and SVM.

EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi particularly object localisation problems. Both fitness functions use weighted F-measure of a genetic program and consider the localisation fitness values of the detected object locations, which are the relative weights of these locations to the target object centres. The first fitness function calculates the weighted localisation fitness of each detected object, then uses these localisation fitness values of all the detected objects to construct the final fitness of a genetic program. The second fitness function calculates the average locations of all the detected object centres then calculates the weighted localisation fitness value of the averaged position. The two fitness functions are examined and compared with an existing fitness function on three object detection problems of increasing difficulty. The results suggest that almost all the objects of interest in the large images can be successfully detected by all the three fitness functions, but the two new fitness functions can result in far fewer false alarms and spend much less training time.

Selection EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

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optimization problem EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

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Programming EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi concepts that works with sets of attributed visual primitives rather than with raster images. The paper presents the approach in detail and verifies it in an experiment concerning locating objects in real-world 3D scenes.

oscillations EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

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problems EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

Based Interactive Genetic Algorithm EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

a Customizable C2C Framework: Entrusting Select Operations to IGA Users EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

Algorithms for Multi-objective Floor Plan Optimisation EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

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Creation EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

Musical Performance EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC

Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

Strongly Typed Genetic Programming EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi order to model expressive music performance. The approach consists of inducing a Regression Tree model from training data (monophonic recordings of Jazz standards) for transforming an inexpressive melody into an expressive one. The work presented in this paper is an extension of [1], where we induced general expressive performance rules explaining part of the training examples. Here, the emphasis is on inducing a generative model (i.e. a model capable of generating expressive performances) which covers all the training examples. We present our evolutionary approach for a one-dimensional regression task: the performed note duration ratio prediction. We then show the encouraging results of experiments with Jazz musical material, and sketch the milestones which will enable the system to generate expressive music performance in a broader sense.

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Cinematic Properties EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

genre-specific interval distance evaluation EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

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Multiobjective Optimization EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

GA Scalability EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

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Dynamic Environments: A Case Study Using the Shaky Ladder Hyperplane-Defined Functions EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi

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Electric Drives EvoCOMNET, EvoHOT, EvoIASP, EvoInteraction, EvoMUSART, EvoSTOC Carlos Cotta and Rolf Drechsler and Evelyne Lutton and Penousal Machado and Jason H. Moore and Juan Romero and George D. Smith and Giovanni Squillero and Hideyuki Takagi