Interactive Evolutionary Computation and Non-ECC Deterministic Algorithms for Composition (*Evolutionary Computing Series – Progressive Recursion***)**

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Objective:

A.) Speed—Rule-based algorithms absent ECC eschew extra wait-states per memory read
B.) Interpretable Errors—2, 3, 4+ bit errors create errant 'branches' in recursion tree: "aural artifacts"

1 Comparison = 1 time unit (n): one iteration (1) (Tn(2)) = 1 Compound Recursive Call

T*n*(2): Inverse Merge Sort— Recursively multiplying a data set in an L-System into double its original size, we arrive at a base case from which our model is able to sort the set which takes time of X(n) with a computational model of (1) (T*n*(2)).

T*n*(2)=0 only when sort-set = "1"

Determining the time to disperse data-set into a tree (i.e., Tn(1)+1) and the time it takes to sort each compound recursive product results in the following equation: Tn > n + T*n*(2) + T*n*(2)

This is the primary method with which errors in a data-set are interpreted as sonic artifacts and replicated recursively (the same method is applied to a typical data-set)…

Progressive Recursion (PR)

$Tn\ (2) = (a, b) \rightarrow$

$n = (a_1, b_1); n = (a_2, b_2) \rightarrow$

$a * b = (a_1 * b_1) * 2^{2n} + a_2 * b_2 + (a_1 * b_2 + a_2 * b_1) * 2^n$ or $Tn(_{2n}) = 4Tn(_n + _n)$

2^{nd} Iteration w/ Improved Coefficient of 2^n

$a_1 * b_2 + a_2 * b_1 = (a_1 - a_2)*(b_2 - b_1) + (a_1 * b_1) + (a_2 * b_2)$ or $Tn(_{2n) =}\ 3Tn\ (_n + _n)$

Advanced PR Trees

Example:

Size = n w/ one-step 3n iteration:

$n, (3/4)n, (3/4)^2 n \rightarrow$

PR Applied to Inverse Merge Sort

$T_{n\,(2)} = 2T_{n\,(2)\,(2)} + n \rightarrow 2Tn\ (2)^2, (3/4)\ 2Tn\ (2)^2\ (3/4)^2\ 2Tn(2)^2$