Working Note CG1129250: Path Probability Algorithm

Chuck Garcia

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Abstract

This document describes the path probability algorithm used in FQAM.

1 Introduction

The introduction section provides an overview of the path probability algorithm.

2 Methodology - the algorithm

Algorithm: $[C] := GEN_PATH_PROBILITY_MATRIX_UNB(A, b, C)$

$$A \to \left(A_L \mid A_R \right) b \to \left(\frac{b_T}{b_B} \right), C \to \left(\frac{C_T}{C_B} \right)$$

where A_L has 0 columns, C_T has 0 rows, b_T has no elements while $n(A_L) < n(A)$ do

$$\left(\begin{array}{c|c}A_L & A_R\end{array}\right) \rightarrow \left(\begin{array}{c|c}A_0 & a_1 & A_2\end{array}\right), \left(\begin{array}{c}b_T \\ \hline b_B\end{array}\right) \rightarrow \left(\begin{array}{c}b_0 \\ \hline \beta_1 \\ b_2\end{array}\right), \left(\begin{array}{c}C_T \\ \hline C_B\end{array}\right) \rightarrow \left(\begin{array}{c}C_0 \\ \hline c_1^T \\ \hline C_2\end{array}\right)$$

where a_1 has 1 column, c_1 has 1 row

$$c_1 = \beta a_1 + c_1$$

$$A \to \left(A_L \middle| A_R \right) \leftarrow \left(A_0 \middle| a_1 \middle| A_2 \right), \left(\frac{b_T}{b_B} \right) \leftarrow \left(\frac{b_0}{\beta_1} \right), \left(\frac{C_T}{C_B} \right) \leftarrow \left(\frac{C_0}{\frac{c_1^T}{C_2}} \right)$$

endwhile

Figure 1: Algorithm Diagram

3 Results

This section presents the results obtained from the path probability algorithm.

4 Conclusion

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