

Project 1.1
Analytical Models of Locality within Matrix
Multiply Algorithms

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1 INTRODUCTION

2 SINGLE LEVEL ANALYTICAL MODELS

2.1 ASSUMPTIONS

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3 MODEL WITH TWO-LEVEL CACHE HIERARCHY

3.1 ASSUMPTIONS

3.2 MODEL

3.3 GRAPHS

4 MODEL WITH TWO-LEVEL CACHE HIERARCHY AND REGISTER FILE

4.1 ASSUMPTIONS

4.2 MODEL

4.3 GRAPHS

$$\begin{aligned}(x+y)^3 &= (x+y)^2(x+y) \\ &= (x^2 + 2xy + y^2)(x+y) \\ &= (x^3 + 2x^2y + xy^2) + (x^2y + 2xy^2 + y^3) \\ &= x^3 + 3x^2y + 3xy^2 + y^3\end{aligned}\tag{4.1}$$

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Lorem ipsum dolor sit amet, consectetur adipiscing elit.

$$A = \begin{bmatrix} A_{11} & A_{21} \\ A_{21} & A_{22} \end{bmatrix}\tag{4.2}$$

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4.3.1 HEADING ON LEVEL 3 (SUBSUBSECTION)

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5 LISTS

5.1 EXAMPLE OF LIST (3*ITEMIZE)

- First item in a list
 - First item in a list
 - * First item in a list
 - * Second item in a list
 - Second item in a list
- Second item in a list

5.2 EXAMPLE OF LIST (ENUMERATE)

1. First item in a list
2. Second item in a list
3. Third item in a list