# CS 5220
# Project 1 - Matrix Multiplication

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## 1 Introduction

In this project, we tried several methods to fine-tune square matrix multiplication. Based on the `dgemm_blocked.c`, we tried unrolling index, modifying loop sequence to take advantage of SSE, and experimenting with different optimization flags.

## 2 Optimization

### 2.1 Block Multiplication with Multiple Block Sizes

#### 2.1.1 Approach

//Describe what we did here.

#### 2.1.2 Results

//Add graphs here.

### 2.2 Block Multiplication with Manual Loop Unrolling

#### 2.2.1 Approach

//Describe what we did here.

#### 2.2.2 Results

//Add graphs here.

### 2.3 AVX Instructions

#### 2.3.1 Approach

//Describe what we did here.

#### 2.3.2 Results

//Add graphs here.

### 2.4 Compiler Optimization Flags

#### 2.4.1 Approach

//Describe what we did here.

#### 2.4.2 Results

//Add graphs here.

## 3 Next Steps

### 3.1 Copy Optimization