

CS 6363: Advanced Compiler Construction

Feb 8, 2010

You Name:

1. Given the following loop nest,

```
do I = 2, N-1
  do J = 2, N-1
    a(I,J) = (a(I-1,J) + a(I,J-1) + a(I,J+1) + a(I+1,J))/4
  enddo
enddo
```

- (a) Give the dependence distance matrix for the above loop nest.
- (b) Apply loop skewing and loop interchange to transform the loop nest for fine-grained parallelism. Give the new dependence matrix after each transformation.