CS 6363: Advanced Compiler Construction
Feb 1, 2010

You Name:

1. Given the following loop nest,

```
do j = 1, n-1
    do i = 1, n-1
        rx(i,j) = rx(i,j) - rx(i,j-1) * d
        ry(i,j) = ry(i,j) - ry(i-1,j) * d
        x(i,j) = x(i,j) + rx(i,j)
        y(i,j) = y(i,j) + ry(i,j)
    enddo
enddo
```

   (a) Give the dependence drection matrix and the dependence graph for the above loop nest

   (b) Apply loop distribution and interchange to transform the loop nest for fine-grained parallelism.

   (c) Apply vectorization transformation to your loop nest.