

## CS 6363: Advanced Compiler Construction

Mar 8/10, 2010

You Name:

1. Given the following loop nest.

```
DO  J=1,N
DO  I=1,M
    CU(I+1,J) = 0.5*(P(I+1,J)+P(I,J))
    CV(I,J+1) = 0.5*(P(I,J+1)+P(I,J))
ENDDO
ENDDO
```

- (a) Apply scalar replacement to improve register usage of the code.
- (b) Apply loop unroll-and-jam by a factor of 2, then apply scalar replacement to improve register usage of the code.