

CS 6363: Advanced Compiler Construction

Jan 13, 2010

You Name:

1. Introducing data dependence

(a) What are the conditions of a data dependence from statement S_1 to S_2 ?

(b) What is the meaning of true, anti, and output dependences?

(c) What is the safety constraint of reordering transformations?

2. Loop dependence

(a) What is the meaning of iteration vector $(3,5,7)$? What is the meaning of iteration vector $I < J$?

(b) What is the iteration space of a loop nest?

(c) What is the distance vector of a loop dependence from iteration I of s_1 to iteration J of s_2 ?

(d) What is the relation between dependence distance and direction?

(e) What is the safety constraint of loop reordering transformations?

3. Level of loop dependence

(a) What is the meaning of loop carried/independent dependences?

(b) What is the level of a loop dependence or loop transformation?

(c) What is the safety constraint of loop parallelization?