Propositions (Stellingen)

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Compiling Nested Loop Programs to Process Networks

1. Every nested loop program with static control and affine indexes (SANL) can be converted in four steps to a Process Network (PN) using integer linear programming (ILP).

2. Using if-conversion, an affine nested loop program containing data-dependent "if"-statements, can be converted to an equivalent PN.

3. Although the conversion from SANLP to a PN can be formulated as an ILP problem, in most of the cases polynomial complexity formulations can be applied.

4. Multiplicity and order lead to four different types of inter-process communication.

5. The lexicographically maximal preimage allows to decouple the program sequential execution into multiple threads that are synchronizing and communicating data over multiple-assigned memory arrays.

6. Based on the data dependency function, the corresponding lexicographically maximal preimage can be established analytically as a union of polytopes.

7. Communication and synchronization are key issues in exploiting thread level parallelism.

8. While a question requires an answer, an answer may rise many questions.

9. Take a second, open your mind, heart and eyes and you will find yourself watching the movie of your life; feeling free although knowing that the feeling is wrong.

10. Friendship is a matter of people commonalities. The more commonalities the bigger friendship.

11. Acknowledging your own incapability can be a constant source of motivation. However, it may become a source of demotivation and even depression.

12. Frequent holidays do not necessarily reflect hard working activities but rather boring and unsatisfactory ones.

13. People tend to rather remember who formulated a problem forgetting who solved it.

14. Criticism is a creative attitude with potentially high destructive outcome.