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Propositions (Stellingen)

by Alexandru Turjan, author of

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.