

Chapter 6 Reachability Criteria (revised)

- 6.1 Reachability of Marked Graphs
- 6.2 Reachability of More General Subclasses
- 6.3 Problems

Chapter 7 Structural Properties (revised)

- 7.1 Structural Liveness
- 7.2 Controllability.
- 7.3 Structural Boundedness.
- 7.4 Conservativeness
- 7.5 Repetitiveness
- 7.6 Consistency
- 7.7 S- and T-invariants
- 7.8 Structural B-Fairness
- 7.9 Starvation-Free Solution to the Dining Philosophers' Problem (to be added)
- 7.10 Problems

Chapter 8 Advanced Topics for Marked Graphs

- 8.1 Live-Safe Equivalence Classes
- 8.2 Expansion Rules for LSMG Synthesis
- 8.3 Weighted Sum of Tokens
- 8.4 Token Distance Matrix for Marked Graphs
- 8.5 Maximum Concurrency in Marked Graphs
- 8.6 MG Synthesis of Synchronic Distance Matrix
- 8.7 Problems

Chapter 9 Timed and Stochastic Petri Nets and Applications

- 9.1 Timed Nets and Minimum Cycle Time
- 9.2 Stochastic Nets and Performance Modeling
- 9.3 SPN model of Fault-Tolerant Clock Synchronization (to be added)
- 9.4 GSPN Model of Task Allocation in Distributed Systems (to be added)
- 9.5 Problems

Chapter 10 High-Level Petri Nets and Applications

- 10.1 Introduction to High-Level Petri Nets
- 10.2 HLPN Model of Horn Clause Logic Programs
- 10.3 Applications to Non-Classical Logic and Reasoning
- 10.4 Application to Robot Planning
- 10.5 HLPN Model of Distributed Database Systems
- 10.6 Problems

References**List of Call Numbers of References Available from the UIC Library****Copies of Slides to be Used in Class****Reprints of Prof. Murata's and his Students' Recent Publications**

- #1:** M. Notomi and T. Murata, "Hierarchical Reachability Graph of Bounded Petri Nets for Concurrent-Software Analysis," *IEEE Transactions on Software Engineering*, pp.325 -336, Vol. 20, No.5 May 1994