CIS 525, Software Development of Parallel and Distributed Systems

APPLICATIONS OF PETRI NETS
IN COMPUTER SCIENCE

1. Modeling of computer architecture/computer organization and algorithms related to their functions (Bear's paper).

2. Modeling and evaluation of concurrent programs.

3. OO methodology (Computer Languages, paper).

4. Modeling of communication protocols for computer networks (numerous papers)

5. Multiprocessor applications.

6. Network management systems.

7. SDL.

8. Election protocol in the Token Ring.

9. Cache coherence protocols.

10. Programming a closely coupled multiprocessor system.

11. Formal specification of executable software.

12. Pascal semantics: combination of denational semantics and Petri nets.

13. Reasoning in the presence of inconsistency.

14. Models for multiple agent planning.

15. Human-computer interaction and Role/Function/Action Nets.

16. Models of logic programs.

17. Integrated software development methodology.

18. Reactive and time-dependent software systems (Pnueli's and Manna's book +temporal logic).

19. Performance models of computer systems using stochastic and timed Petri nets.

20. Specification and correctness of distributed systems.

21. Validation of VLSI chips.

22. Modeling and evaluation of flexible manufacturing systems.

23. Distributed data bases and office automation.

24. Robotics/ multiple agent planning.