

# NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Computer Science and Engineering - NOC:Model Checking

Subject Co-ordinator - Prof. B. Srivathsan

Co-ordinating Institute - Chennai Mathematical Institute

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

Lecture 1 - Course Overview  
Lecture 2 - Module 1 - Modeling code behaviour  
Lecture 3 - Module 2 - Modeling hardware circuits  
Lecture 4 - Module 3 - Modeling data-dependent programs  
Lecture 5 - Module 4 - Modeling concurrent systems  
Lecture 6 - Summary  
Lecture 7 - Module 1 - Model checking tools  
Lecture 8 - Module 2 - Simple models in NuSMV  
Lecture 9 - Module 3 - Hardware verification using NuSMV  
Lecture 10 - Module 4 - Modeling concurrent systems in NuSMV  
Lecture 11 - Summary.  
Lecture 12 - Module 1 - A problem in concurrency  
Lecture 13 - Module 2 - What is a property?  
Lecture 14 - Module 3 - Invariants  
Lecture 15 - Module 4 - Safety properties  
Lecture 16 - Module 5 - Liveness properties  
Lecture 17 - Summary..  
Lecture 18 - Module 1 - Road map  
Lecture 19 - Module 2 - A gentle introduction to automata  
Lecture 20 - Module 3 - Simple properties of finite automata  
Lecture 21 - Module 4 - Safety properties described by automata  
Lecture 22 - Summary...  
Lecture 23 - Module 1 - Specifying properties  
Lecture 24 - Module 2 - Omega-regular expressions  
Lecture 25 - Module 3 - Bchi automata  
Lecture 26 - Module 4 - Simple properties of Bchi automata  
Lecture 27 - Summary....  
Lecture 28 - Module 1 - Overview  
Lecture 29 - Module 2 - Omega-regular expressions to NBA

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- Lecture 35 - Module 3 - A puzzle
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- Lecture 37 - Module 1 - Automata based LTL model-checking
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- Lecture 42 - Module 2 - CTL\*
- Lecture 43 - Module 3 - CTL
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- Lecture 46 - Module 2 - EX, EU, EG
- Lecture 47 - Module 3 - Final algorithm
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