### Lecture 16 - March 10

### **Model Checking**

# Nesting Temporal Operators: FG¢ Exercise: G¢ vs. FG¢

### Announcements/Reminders

- ProgTest1 results & feedback released
  - + Submit a regrading request if necessary.
- WT1 results to be released by the end of Friday
- Lab3 released
- Guide for **ProgTest2** to be released
- Office Hours: 3pm to 4pm, Mon/Tue/Wed/Thu
- TA contact information (on-demand for labs) on eClass

#### Model vs. Path Satisfaction: Exercises (4.2)





## Nesting "Global" and "Future" in LTL Formulas



JC. 1710

= (model sof.) Each path starting with s is s.t. <u>eventually</u>,  $\phi$  holds continuously.

**Q.** Formulate the above nested pattern of LTL operator.  $S(F)FG\phi \in \forall \pi \cdot \pi = S \rightarrow \cdots \Rightarrow$ 

Q. How to prove the above nested pattern of LTL operators? \*\* @ Find a withess i \*\*\* 3 each state at index i, it, it, it, ... Q. How to disprove the above nested pattern of LTL operators? \* O Find a witness TC = S -> " For all possible future states at indreps 1, 2, 3, ...

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#### Model Satisfaction: Exercises (5.1)



