Cockrell School of Engineering

# Verifying Distributed Algorithms
## in Promela

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# Outline

# Cockrell School Beamer Presentation Template

- ▶ Conforms to Cockrell School Visual Style Guide
  - – Exact color palette
  - – Opensans fonts
- ▶ Easily change department names in title bar
  - – Full citation with active hyperlinks to DOI upon first citation.
  - – See next slide for repeated citation behavior

# Dining Philosophers

## An equation block

$$\vec{F} = m\vec{a}$$

- Second instance of citations use short citation hyperlinked to original.

# Token Ring Algorithm

▶ Simple and easily scalable
  – Pass token around ring of processes
  – Only processes with token can enter CS
  – No Starvation

Figure: Token Ring Algorithm

# Token Ring Implementation

# Lamport's

## An equation block

$$\vec{F} = m\vec{a}$$

- Second instance of citations use short citation hyperlinked to original.

# Szymanski's Algorithm

- ► Extension of Lamport's
  - – satisfies linear wait
  - – three booleans per process
- ► Extension of Lamport's

Figure: Szymanski's Algorithm     Figure: State-tracking booleans

# Szymanski's Implementation

# Szymanski's Analysis

# Questions

- English mothafucka, do you speak it?