

# **Trends in Concurrent and Distributed Systems Verification**

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## Syllabus:

- paper readings
- grading outcome:
  - \* class presentations
  - \* final project

## Synopsis:

Reasoning about the correctness of concurrent and distributed systems has proven to be very challenging given the large (often infinite) set of possible behaviors that can be generated by applications. Remarkable advances in automated theorem proving and mechanized proof assistants, however, have now made it possible to provide strong verified guarantees for many state-of-the-art protocols, implementations, and models. This seminar explores classical and recent results in this space, mostly through paper reading and tool experimentation. Topics include: linearizability, memory and consistency models, protocol verification, and case studies. Grades will be based on classroom participation, presentation of papers and tools, and a final project.