

Model Checking Collaboration, Competition and Dense Fault Resilience

研究生:黃重豪

指導教授:王凡 博士

□試委員:

地點:

時間:

Outline

- Motivation
- Contribution
- Game graph
- BSIL & TCL
 - Existing logics about game and strategy
 - Running example
 - Syntax and semantics
 - Expressive power
 - Algorithm and complexity
- SW Resilience against Dense Errors
 - Fault tolerance
 - Safety resilience games
 - AMC with events
 - Algorithm and complexity
- Experiment
- Conclusion

Motivation

- Formal verification of open systems requires taking user's behavior into consideration.
- Existing techniques suffer from either lack of expressive power or expensive time complexity.
- If generic model checking techniques are unavoidably with high complexity, we can try to focus on certain aspect and develop corresponding algorithm to solve the problem.

Contribution

- Logics, BSIL&TCL, which can specify the relationship between the strategies used to fulfill different sub-formula
 - Syntax & semantics
 - Expressive power
 - Model checking algorithm
 - Complexity
- A new criteria called dense fault resilience
 - Addressing the justification
 - An algorithm to verify the dense fault resilience of open systems
 - The complexity proof of the algorithm
- Implementation and experiment