



Department of Computer Science

Automated Approaches for Analysis and Synthesis

William Hallahan

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Hosted by Ali Mili

Date: Friday, March 4, 2022

Coffee: 2:15 PM – 2:30 PM

Seminar: 2:30 PM – 3:30 PM

Location: GITC 4402 (4th Floor Seminar Lecture Hall)

WeEx Link: <https://njit.webex.com/njit/j.php?MTID=m80bac7232ba6004466d45c7e1d53eed6>

<https://cs.njit.edu/seminars>

Abstract:

Formal methods techniques such as verification, analysis, and synthesis allow programmers to prove properties of their programs, or automatically derive programs from specifications. To be widely usable in the real world, formal methods tools must provide users with clear error messages, and would ideally be fully automated.

In this talk, I will show applications of formal methods to ease the debugging of errors from a class of tools called modular verifiers. Further, I will show an extension of this work to fully automate the process of modular verification. I will also examine how formal methods can be applied to build easy-to-use tools in the networking domain, and automate certain repetitive and tedious networking programming problems.

Bio:

William Hallahan is a PhD candidate at Yale University. His research focuses on formal methods techniques, such as symbolic execution and modular verification, and applications of formal methods to real world systems, such as firewalls and programmable networks. His work has been published at top programming languages and systems conferences, including PLDI, SIGCOMM, NSDI, and AAI.