

Phúc C. Nguyễn

Research and Engineering Interests

My research focuses on modular verification of rich properties for higher-order programs. My engineering interests lie in applying research results in the fields of programming languages and static verification to develop analyses and tools that help programmers construct correct, maintainable, and efficient software.

Education

- 2014-2019 **University of Maryland**, Ph.D. in Computer Science
- 2011-2013 **Northeastern University**, M.S. in Computer Science
- 2006-2009 **RMIT University, Vietnam**, B.A.S. in Information Technology

Publications

- 2019 **Size-change Termination as a Contract**, with David Van Horn, Sam Tobin-Hochstadt, and Thomas Gilray. Programming Language Design and Implementation (PLDI '19). ACM.
- 2018 **Soft Contract Verification for Higher-order Stateful Programs**, with David Van Horn, Sam Tobin-Hochstadt, and Thomas Gilray. Principles of Programming Languages (POPL '18). ACM.
- 2017 **Abstracting Definitional Interpreters**, with David Darais, Nicholas Labich, and David Van Horn. International Conference on Functional Programming (ICFP). 2017. ACM.
- 2017 **Higher-order Symbolic Execution for Contract Verification and Refutation**, with David Van Horn and Sam Tobin-Hochstadt. Journal of Functional Programming, 27, January 2017.
- 2015 **Relatively Complete Counterexamples for Higher-order Programs**, with David Van Horn. Programming Language Design and Implementation (PLDI'15), Portland, Oregon, June 2015. ACM.
- 2014 **Soft Contract Verification**, with David Van Horn and Sam Tobin-Hochstadt. International Conference on Functional Programming (ICFP'14), Gothenburg, Sweden, September 2014. ACM.

Service

- 2017 **Artifact Evaluation Committee**
International Conference on Functional Programming (ICFP)
- 2016 **Artifact Evaluation Committee**
European Conference on Object-Oriented Programming (ECOOP)

Research Experience

- 2014-2019 **University of Maryland**, Graduate Research Assistant
Generalized symbolic execution for higher-order stateful programs and applied the result to verify programs against expressive contracts and generate counterexamples.
- 2013 **Northeastern University**, Graduate Research Assistant
Applied higher-order symbolic execution to statically verify dynamic contracts for Racket.

Teaching Experience

- 2012 **Northeastern University**, Teaching Assistant, Fundamentals in Computer Science.

Non-academic Professional Experience

- Summer 2018 **Google**, Software Engineer Intern
Applied research in program synthesis into automatic test generation for D8/R8 compiler/optimizer
- 2009-2011 **MultiNC**, Software Developer
Applied natural language processing for real-time matching of chat messages. Developed Android apps in Scala and Java.

Programming Languages Experience: Racket, F#, Haskell, OCaml, Scala, Idris, Java, Python, Kotlin