

Nick Giannarakis

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EDUCATION

PRINCETON UNIVERSITY | PHD IN COMPUTER SCIENCE

September 2015 - September 2020 | Princeton, NJ

Thesis: An Intermediate Language for Network Verification

Advisor: David Walker

ECOLE NORMALE SUPERIEURE DE CACHAN | MASTERS OF RESEARCH IN COMPUTER SCIENCE (MPRI M2)

September 2014 - August 2015 | Paris, France

Thesis: Release-Acquire on Power processors

Advisor: Viktor Vafeiadis (MPI-SWS)

NATIONAL TECHNICAL UNIVERSITY OF ATHENS | DIPLOMA OF ELECTRICAL AND COMPUTER ENGINEERING

September 2018 - August 2014 | Athens, Greece

Thesis: Formal Verification of a Control-Flow Integrity Mechanism Based on Tags

Advisor: Catalin Hritcu (INRIA-Paris)

WORK EXPERIENCE

AMAZON.COM | APPLIED SCIENTIST II

August 2021 - .. | Seattle, WA

UNIVERSITY OF WISCONSIN-MADISON | POSTDOCTORAL FELLOW

September 2020 - July 2021 | Madison, WI

AMAZON.COM | APPLIED SCIENTIST INTERN

May 2019 - August 2019 | Seattle, WA

Worked on SMT-based verification of routing policies in AWS datacenters.

MICROSOFT RESEARCH | RESEARCH INTERN

June 2017 - September 2017 | Seattle, WA

Worked on Vale* a DSL for implementing and verifying assembly-level cryptographic primitives, and F* a general-purpose program verifier.

MAX-PLANCK INSTITUTE FOR SOFTWARE SYSTEMS | RESEARCH INTERN

April 2015 - September 2015 | Kaiserslautern, Germany

Worked on the relaxed memory semantics of Power processors.

INRIA PARIS | RESEARCH INTERN

April 2014 - September 2014 | Paris, France

Developed a (machine-checked) proof of correctness of a tag-based reference monitor for Control-Flow Integrity.

PUBLICATIONS

CONFERENCE PUBLICATIONS

[1] ProbNV: Probabilistic Verification of Network Control Planes.

N. Giannarakis, A. Silva, and D. Walker. In *Proceedings of the 26th ACM SIGPLAN International Conference on Functional Programming, ICFP 2021*.

[2] NV: An intermediate language for verification of network control planes.

N. Giannarakis, D. Loehr, R. Beckett, and D. Walker. In *Proceedings of the 41st ACM SIGPLAN Conference on Programming Language Design and Implementation, PLDI 2020*.

[3] Efficient verification of network fault tolerance via counterexample-guided refinement.

N. Giannarakis, R. Beckett, R. Mahajan, and D. Walker. In *International Conference on Computer Aided Verification, CAV 2019*.

[4] Meta-f*: Proof automation with smt, tactics, and metaprograms.

G. Martínez, D. Ahman, V. Dumitrescu, **N. Giannarakis**, C. Hawblitzel, C. Hritcu, M. Narasimhamurthy, Z. Paraskevopoulou, C. Pit-Claudel, J. Protzenko, T. Ramananandro, A. Rastogi, and N. Swamy. In *Programming Languages and Systems*, ESOP 2019

[5] A verified, efficient embedding of a verifiable assembly language.

A. Fromherz, **N. Giannarakis**, C. Hawblitzel, B. Parno, A. Rastogi, and N. Swamy. *Proc. ACM Program. Lang.*, POPL 2019.

[6] Taming release-acquire consistency.

O. Lahav, **N. Giannarakis**, and V. Vafeiadis. In *Proceedings of the 43rd Annual ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages*, POPL 2016.

[7] Micro-policies: Formally verified, tag-based security monitors.

A. A. De Amorim, M. Dénès, **N. Giannarakis**, C. Hritcu, B. C. Pierce, A. Spector-Zabusky, and A. Tolmach. In *2015 IEEE Symposium on Security and Privacy*, IEEE S&P 2015.

WORKSHOPS

[1] NV: An intermediate language for network verification.

R. Beckett, **N. Giannarakis**, D. Loher, and D. Walker. In *Proceedings of the ACM SIGCOMM 2019 Workshop on Networking and Programming Languages*, NetPL'19.

[2] ML as a tactic language, again.

G. Martínez, D. Ahman, V. Dumitrescu, **N. Giannarakis**, C. Hawblitzel, C. Hritcu, and M. Narasimhamurthy. *ML 2018*.

TEACHING EXPERIENCE

PRINCETON UNIVERSITY | TEACHING ASSISTANT

2018 Functional Programming

2017 Advanced Programming Techniques

ACADEMIC SERVICE

2022 PLDI Program Committee

2021 Reviewer for Journal of Computer Security

2021 CAV Artifact Evaluation Committee

2020 PLDI Artifact Evaluation Committee

2018 POPL Artifact Evaluation Committee

2017 POPL Artifact Evaluation Committee

AWARDS

2020 CRA Computing Innovation Postdoctoral Fellowship

2015 Princeton University Graduate Fellowship

2015 Stanley J. Seeger Hellenic Studies Prize

2014 Labex Digicosme MPRI scholarship

TECHNICAL SKILLS

OCaml, Java, Python, C, Coq, F*, Z3, BDDs