

Luke Nelson

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Education

University of Washington, Ph.D. (*In progress*), Computer Science 2017 – Present
Advisor: Xi Wang
University of Washington, B.S., Computer Science – *Cum Laude* 2013 – 2017
Advisor: Xi Wang

Employment

University of Washington, Graduate Research Assistant 2017–present
University of Washington, Undergraduate Research Assistant 2016–2017
Facebook, Inc., Software Engineer Intern Jun. 2016 – Sept. 2016
University of Washington, Undergraduate Research Assistant 2015–2016
Delphix, Inc., Software Engineer Intern Jun. 2015 – Sept. 2015

Publications

- [1] Luke Nelson, James Bornholt, Ronghui Gu, Andrew Baumann, Emina Torlak, and Xi Wang. Scaling symbolic evaluation for automated verification of systems code with Serval. In *Proceedings of the 27th ACM Symposium on Operating Systems Principles (SOSP)*, pages 225–242, Huntsville, Ontario, Canada, October 2019.
- [2] Helgi Sigurbjarnarson, Luke Nelson, Bruno Castro-Karney, James Bornholt, Emina Torlak, and Xi Wang. A note on verifying information flow control systems with Nickel. Technical Report UW-CSE-2019-10-01, University of Washington, October 2019.
- [3] Helgi Sigurbjarnarson, Luke Nelson, Bruno Castro-Karney, James Bornholt, Emina Torlak, and Xi Wang. Nickel: A framework for design and verification of information flow control systems. In *Proceedings of the 13th USENIX Symposium on Operating Systems Design and Implementation (OSDI)*, pages 287–306, Carlsbad, CA, October 2018.
- [4] Luke Nelson, Helgi Sigurbjarnarson, Kaiyuan Zhang, Dylan Johnson, James Bornholt, Emina Torlak, and Xi Wang. Hyperkernel: Push-button verification of an OS kernel. In *Proceedings of the 26th ACM Symposium on Operating Systems Principles (SOSP)*, pages 252–269, Shanghai, China, October 2017.

Awards

Best Paper Award and Distinguished Artifact Award, ACM Symposium on Operating Systems Principles 2019
Corin Anderson Endowed Fellowship, University of Washington 2017–2018

Presentations and Posters

Scaling symbolic evaluation for automated verification of systems code with Serval, *Presentation*
2019 New England Systems Verification Day Oct. 2019
Verifying enclave systems with Serval, *Presentation*
2019 Open-Source Enclaves Workshop Jul. 2018
Nickel: A framework for design and verification of information flow control systems, *Presentation*
2018 New England Systems Verification Day Oct. 2018

Hyperkernel: Push-Button Verification of an OS Kernel , <i>Poster</i> SOSP (with Helgi Sigurbjarnarson)	Oct. 2017
Designing Systems for Push-Button Verification , <i>Presentation</i> Allen School 2017 Annual Research Day	Nov. 2017
2017 New England Systems Verification Day (with Xi Wang and Helgi Sigurbjarnarson)	Oct. 2017
Ouroboros: Bootstrapping a Formally Verified In-Kernel Interpreter , <i>Poster</i> OSDI (Jared Roesch, Luke Nelson, Zachary Tatlock, Xi Wang)	Oct. 2016

Teaching

CSE P 551: Professional Master's Operating Systems — <i>Teaching Assistant</i>	Autumn 2019
CSE 551: Graduate Operating Systems — <i>Teaching Assistant</i>	Winter 2019
CSE 481A: OS Capstone – <i>Teaching Assistant</i>	Winter 2018
CSE 351: The Hardware/Software Interface – <i>Teaching Assistant</i>	Spring 2015