Eric Hayden Campbell

Cornell University
PhD Candidate, Department of Computer Science
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Education

Cornell University
Ph.D. in Computer Science, Expected May 2023
M.Sc. in Computer Science, December 2020
Research Interests: Network Verification, Program Synthesis, Semantics
2019 NSF GRFP Fellow

Pomona College
B.A.s in Computer Science & Mathematics, May 2017
Thesis: Infiniteness and Linear Temporal Logic

Selected Research

Avenir: Managing Data Plane Heterogeneity via Control Plane Synthesis
Eric Hayden Campbell, Bill Hallahan, Priya Srikumar, Carmelo Cascone, Jed Liu,
Vignesh Ramamurthy, Hossein Hojjat, Robert Soulé, Ruzica Piskac, and Nate Foster
NSDI 2021

Weakest Inference of Control Plane Specifications
Eric Hayden Campbell, Hossein Hojjat Nate Foster
In Review, PLDI 24

A Database-Theoretic Foundation for Networks
Eric Hayden Campbell, Christoph Koch, Nate Foster
In Production

Kleene Algebra Modulo Theories
Michael Greenberg, Ryan Beckett, and Eric Hayden Campbell
PLDI 2022, Distinguished Paper Award

Π4: Dependently-Typed Data Plane Programming
Matthias Eichholz, Eric Hayden Campbell, Matthias Krebs, Nate Foster, Mira Mezini
POPL 2022

How to Avoid Making a Billion-Dollar Mistake:
Type-Safe Data Plane Programming with SafeP4
Matthias Eichholz, Eric Hayden Campbell, Nate Foster, Guido Salvaneschi, Mira Mezini
ECOOP 2019

Industry

Fujitsu Laboratories of America
Research Intern, Property Inference for Legacy Networks
Sunnyvale, CA. May 2018 - Aug 2018

Further Publications	**Epistemic Semantics in Guarded String Models** Eric Hayden Campbell and Mats Rooth *SCiL 2021*
	Injecting Finiteness to Prove Completeness for **Finite Linear Temporal Logic** Eric Hayden Campbell and Michael Greenberg *arXiv:2107.06045*, July 2021
	Constructing Integer Matrices with Integer Eigenvalues Christopher Towse and Eric Hayden Campbell *The Mathematical Scientist*, June 2016

Invited Talks

Avenir: Managing Data Plane Diversity with Control Plane Synthesis:
- *VLCS Seminar*. EPFL. Oct 23.
- *Tech Talk*. Intel. May 2022.
- *Tech Talk*. Intel. March 2022.
- *Computer Aided Verification*. P4 Verification Workshop. July 2021.
- *Simons Institute*. Synthesis of Models and Systems. May 2021
- *Networked Systems Design & Implementation*. April 2021
- *Synthesis Discussion Group*. Yale University. September 2020
- *P4 Expert Roundtable Series*. How is P4 Evolving as a language?. April 2020

Epistemic Semantics in Guarded String Models
- *Scientific Computing in Linguistics*. February 2021

Outreach

Jane Street AMP
Advanced CS Instructor & Course Design, *CS3*, 2022-2023

4H Career Explorations Conference
Workshop Designer & Leader, *Networking and Security*, 2018-2022

Expand Your Horizons Conference
Workshop Leader, *Googling With Paper Airplanes*, 2017-2019

Originate, Inc
Counselor, *Approachable Web Design*, 2015

Teaching

Computer Science Department, Cornell University
TA, OOP and Data Structures, Spring 2018, *Teaching Excellence Award*
TA, OOP and Data Structures, Fall 2017

Computer Science Department, Pomona College
TA, Databases Systems, Spring 2017
TA, Programming Languages, Fall 2016
Head TA, Intro to CS, Spring 2016
TA, Intro to CS, Fall 2015

Guest Lectures

Responsible AI. Enrepreneurship: Growth Hacking. *Hult International School of Business*. June 2
SafeP4. Network Programming. *Cornell CS*. Oct 2019
Decidability of KAT. Intro To Kleene Algebra. *Cornell CS*. March 2019
Responsibilities for Correctness. FWS: Ethics. *Cornell Philosophy*. Feb 2019