

Eric Hayden Campbell

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Education **Cornell University**

Ph.D. in Programming Languages, Expected May 2023
M.Sc. in Computer Science, December 2020
Thesis Topic: Formal Interface Design for Software Defined Networks
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 Business*. June 2023

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