

# Eric Hayden Campbell

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Cornell University  
PhD Candidate, Department of Computer Science  
Gates Hall  
Ithaca, NY 14853, U.S.A.

ehc86@cornell.edu  
www.ericthewry.github.io

## 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

### **Pomona College**

B.A.s in Computer Science & Mathematics, May 2017

**Thesis:** Infiniteness and Linear Temporal Logic

## Selected Publications

### **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*

### **Control Plane Specification Inference**

Eric Hayden Campbell, Eduardo Coelho de Lima, Hossein Hojjat, Minseok Kwon, Nate Foster  
*In Submission to SIGCOMM 2022*

### **$\Pi$ 4: 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

### **Originate, Inc**

Software Engineering Intern, Web Development  
*San Francisco, CA.* May 2015 - Aug 2015

### **Gladly, Inc**

Software Engineering Intern, Web Development  
*Palo Alto, CA.* May 2014 - Aug 2014

## Awards

*NSF Graduate Research Fellowship*, 2019.  
*Cornell Teaching Excellence Award*, 2018.

## Further Publications

### **Epistemic Semantics in Guarded String Models**

Eric Hayden Campbell and Mats Rooth  
*SCiL 2021*

### **Kleene Algebra Modulo Theories**

Michael Greenberg, Ryan Beckett, and Eric Hayden Campbell  
*Conditionally Accepted, PLDI 2022*  
*arXiv:1707.02894, Sept 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:**

- *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
- *Yale University*. Synthesis Discussion Group. 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

### **4H Career Explorations Conference**

Workshop Designer & Leader, *Networking and Security*, 2018-2022

### **Expand Your Horizons Conference**

Workshop Leader, *Googling With Paper Airplanes*, 2017-2019

## Teaching

### **Computer Science Department, Cornell University**

TA, Object Oriented Programming and Data Structures, Spring 2018  
TA, Object Oriented Programming 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 Lecturing

**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