

# Eric Hayden Campbell

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## Education

### **Cornell University**

Ph.D. in Programming Languages, Expected May 2023  
**Thesis Topic:** Robust Interfaces in Software Defined Networks  
*2019 NSF GRFP Fellow*

### **Pomona College**

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

## Current Projects

### **Weakest Inference of Control Plane Specifications**

Eric Hayden Campbell, Hossein Hojjat Nate Foster

### **Synthesis of Control Plane Maps**

Eric Hayden Campbell, Nate Foster

## Refereed 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*

### **Kleene Algebra Modulo Theories**

Michael Greenberg, Ryan Beckett, and Eric Hayden Campbell  
*PLDI 2022, Distinguished Paper Award*

### **$\Pi$ 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*

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

Eric Hayden Campbell and Mats Rooth  
*SCiL 2021*

### **Constructing Integer Matrices with Integer Eigenvalues**

Christopher Towse and Eric Hayden Campbell  
*The Mathematical Scientist*, June 2016

Industry	<b>Fujitsu Laboratories of America</b> Research Intern, Property Inference for Legacy Networks <i>Sunnyvale, CA.</i> May 2018 - Aug 2018
	<b>Originate, Inc</b> Software Engineering Intern, Web Development <i>San Francisco, CA.</i> May 2015 - Aug 2015
	<b>Gladly, Inc</b> Software Engineering Intern, Web Development <i>Palo Alto, CA.</i> May 2014 - Aug 2014
Invited Talks	<b>Avenir: Managing Data Plane Diversity with Control Plane Synthesis:</b> <ul style="list-style-type: none"> <li>• <i>VLCS Seminar.</i> EPFL. Oct 23.</li> <li>• <i>Tech Talk.</i> Intel. May 2022.</li> <li>• <i>Tech Talk.</i> Intel. March 2022.</li> <li>• <i>Computer Aided Verification.</i> P4 Verification Workshop. July 2021.</li> <li>• <i>Simons Institute.</i> Synthesis of Models and Systems. May 2021</li> <li>• <i>Networked Systems Design &amp; Implementation.</i> April 2021</li> <li>• <i>Synthesis Discussion Group.</i> Yale University. September 2020</li> <li>• <i>P4 Expert Roundtable Series.</i> How is P4 Evolving as a language?. April 2020</li> </ul>
	<b>Epistemic Semantics in Guarded String Models</b> <ul style="list-style-type: none"> <li>• <i>Scientific Computing in Linguistics.</i> February 2021</li> </ul>
Outreach	<b>Jane Street AMP</b> Advanced CS Instruction & Course Design, <i>CS3</i> , Summers 2022 & 2023
	<b>4H Career Explorations Conference</b> Workshop Designer & Leader, <i>Networking and Security</i> , 2018-2022
	<b>Expand Your Horizons Conference</b> Workshop Leader, <i>Googling With Paper Airplanes</i> , 2017-2019
Teaching	<b>Originate, Inc</b> Counselor, <i>Approachable Web Design</i> , 2015
	<b>Computer Science Department, Cornell University</b> TA, OOP and Data Structures, Spring 2018, <i>Teaching Excellence Award</i> TA, OOP and Data Structures, Fall 2017
	<b>Computer Science Department, Pomona College</b> 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	<b>Responsible AI.</b> Entrepreneurship: Growth Hacking. <i>Hult Business.</i> June 2023 <b>SafeP4.</b> Network Programming. <i>Cornell CS.</i> Oct 2019 <b>Decidability of KAT.</b> Intro To Kleene Algebra. <i>Cornell CS.</i> March 2019 <b>Responsibilities for Correctness.</b> FWS: Ethics. <i>Cornell Philosophy.</i> Feb 2019