

# Ryan Beckett

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## EDUCATION

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### Princeton University

Ph.D. in Computer Science (Programming Languages)  
Advisor: David Walker  
Thesis: *Network Control Plane Synthesis and Verification*

Princeton, NJ

Expected Completion: 2018

### Princeton University

M.A in Computer Science

Princeton, NJ

Completed: May, 2015

### University of Virginia

B.S. in Computer Science; B.A. in Mathematics  
Cumulative GPA: 3.94

Charlottesville, VA

Graduated: May 2013

## HONORS AND AWARDS

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ACM SIGCOMM 2016 **best paper** award entitled “Don’t Mind the Gap: Bridging Network-wide Objectives and Device-level Configurations.”  
With Ratul, Mahajan, Todd Millstein, Jitendra Padhye, and David Walker. 2016

Undergraduate Research and Design Symposium (URDS) finalist for undergrad thesis on identifying radars with probabilistic model checking. 2013

Graduated with “Highest Distinction” from the University of Virginia. Awarded to those with a cumulative GPA above 3.8 2013

University of Virginia Intermediate Honors Award for having a GPA in the top 20% of the University after two years. 2011

## RESEARCH EXPERIENCE

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### Princeton

*Graduate Research Assistant*

Perform research with David Walker on applications of Programming Languages to the verification, synthesis, and formalization of network configurations and Software Defined Networking (SDN) programs.

Princeton, NJ

2014-Present

### Microsoft Research

*Research Intern*

Worked with Ratul Mahajan and Jitendra Padhye to develop a system called Propane to synthesize provably-correct BGP configurations.

Redmond, WA

2015-2016

## University of Virginia

*Undergraduate Research Assistant*

Worked with Paul Reynolds on an emitter description language for radars that is amenable to automated probabilistic model checking.

Charlottesville, VA

2011-2013

## TEACHING EXPERIENCE

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Teaching Assistant, Advanced Computer Networks (COS 561) Fall 2016  
Princeton University, Department of Computer Science.

Teaching Assistant, Algorithms & Data Structures (COS 226) Spring 2015  
Princeton University, Department of Computer Science.

Teaching Assistant, Functional Programming (COS 326) Fall 2014  
Princeton University, Department of Computer Science.

Undergrad TA: Ordinary Differential Equations (APMA 3250) Fall 2010  
University of Virginia, Department of Applied Mathematics.

## PUBLICATIONS

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Don't Mind the Gap: Bridging Network-wide Objectives and Device-level Configurations. **Ryan Beckett**, Ratul Mahajan, Todd Millstein, Jitendra Padhye, and David Walker. ACM SIGCOMM, August 2016

Temporal NetKAT. **Ryan Beckett**, Michael Greenberg, and David Walker. 2016  
In ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI '16), June 2016.

Temporal NetKAT. **Ryan Beckett**, Michael Greenberg, and David Walker. 2015  
PLVNET 2015: 1st Workshop on Programming Languages and Verification Technology for Networking, January 2015.

An Assertion Language for Debugging SDN Applications. **Ryan Beckett**, X. Kelvin Zou, Shuyuan Zhang, Sharad Malik, Jennifer Rexford, and David Walker. ACM SIGCOMM HotSDN Workshop, August 2014.

## SKILLS

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### Programming Experience

- OCaml, F#, Java, C++, Python, Groovy,
- Grails, Django, .NET
- Windows, Linux, Mac