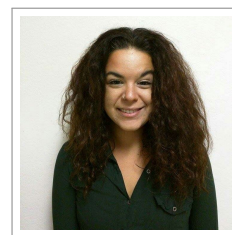


# Niki Vazou

Postdoctoral Fellow  
CS at University of Maryland  
☎ +18584054399  
✉ [nvazou@cs.umd.edu](mailto:nvazou@cs.umd.edu)  
📄 [nikivazou.github.io](https://github.com/nikivazou)  
Born: 20 July 1987, Greece



*"Simplicity is the ultimate sophistication." – Da Vinci*

My goal is to design *usable program verifiers* that can be integrated in standard software development.

---

## Research Interests

Static Program Verification, Type Systems, Type Inference, Abstract Interpretation, Functional Programming, Haskell, Dependent, Refinement and Liquid Typing.

---

## Education

2017-present **Postdoctoral Fellow in Programming Languages Group**

Under the Victor Basili Postdoctoral Fellowship

Department of Computer Science, University of Maryland

2011-2016 **Ph.D. in Programming Systems Group** (GPA: 3.962 / 4)

Department of Computer Science & Engineering

University of California, San Diego

Thesis: “Liquid Haskell: Haskell as a Theorem Prover” supervised by Ranjit Jhala.

2005-2010 **Diploma in Computer Software & Computer Systems** (GPA: 9.24 / 10)

Department of Electrical & Computer Engineering

National Technical University of Athens

Thesis: “Type Systems with Linear Capabilities” supervised by Nikolaos Papaspyrou.

---

## Awards

2015 UCSD CSE Graduate Award for Research.

2014 Microsoft Research Graduate Research Fellowship.

2013, 2012 POPL-PLMW Travel Scholarship.

---

## Work Experience

Summer 2016 Awake Networks, Mountain View, USA.

I used LiquidHaskell to verify correctness on Awake’s production code base.

Summer 2014 Microsoft Research, Redmond, USA.

I worked with Daan Leijen on extended Koka with user-defined effects.

Fall 2013 Microsoft Research, Cambridge, UK.

I worked with Dimitrios Vytiniotis on proving soundness of LiquidHaskell.

Summer 2012 Opa, Paris, French.

I refined error reporting on Opalang, a functional language for cloud programming.

---

## Teaching Experience

- 2017 Instructor of Advanced Functional Programming Languages CMSC498V Fa17, UMD.
- 2013-2016 TA at Grad Programming Languages (CSE230 Fa16, Wi16, Wi14, and Wi13), UCSD.
- 2015 Instructor of "Haskell: Programming with Functions", Workshop at Clubes De Ciencia, Summer 2015, Guanajuato, Mexico.
- 2014 TA at Automata and Computability Theory (CSE105 Fa14), UCSD.
- 2014 Mentor TA at Teaching Methods in CS (CSE599 Fa14), UCSD.
- 2010 TA at Computer Programming, Fa10, NTUA.

---

## Mentoring

- 2017-present Milod Kazerounian – Refinement Types for Ruby, with Jeff Foster.
- 2017-present James Parker – LiquidHaskell for Security Verification, with Michael Hicks.
- Summer '17 Sean Leffler – Summer of Haskell 2017 Project on LiquidHaskell, with Eric Seidel.
- 2015-2016 Michael Smith – Native Type Encoding for LiquidHaskell, with Ranjit Jhala.
- 2015-2016 Kyly Vass – Improving Parser in LiquidHaskell, with Ranjit Jhala.

---

## Publications

- 2018 *Refinement Reflection: Complete Verification with SMT*. **Niki Vazou**, Anish Tondwalkar, Vikraman Choudhury, Ryan Scott, Ryan Newton, Philip Wadler and Ranjit Jhala. To appear in Proceedings of the 45th ACM SIGPLAN Symposium on Principles of Programming Languages, Los Angeles.
- 2017 *A Tale of Two Provers*. **Niki Vazou**, Leonidas Lampropoulos and Jeff Polakow. In Proceedings of the 10th ACM SIGPLAN International Haskell Symposium, Oxford.
- 2016 *From Monads to Effects and Back*. **Niki Vazou** and Daan Leijen. In Proceedings of the 18th International Symposium on Practical Aspects of Declarative Languages, Florida.
- 2015 *Bounded Refinement Types*. **Niki Vazou**, Alexander Bakst and Ranjit Jhala. In Proceedings of the 20th ACM SIGPLAN International Conference on Functional Programming, Vancouver. 16 citations.
- 2015 *Type Targeted Testing*. Eric L. Seidel, **Niki Vazou** and Ranjit Jhala. In Proceedings of the European Joint Conferences on Theory & Practice of Software, London. 20 citations.
- 2014 *Refinement Types for Haskell*. **Niki Vazou**, Eric L. Seidel, Ranjit Jhala, Dimitrios Vytiniotis and Simon Peyton-Jones. In Proceedings of the 19th ACM SIGPLAN International Conference on Functional Programming, Gothenburg. 76 citations.
- 2014 *LiquidHaskell: Experience with Refinement Types in the Real World*. **Niki Vazou**, Eric L. Seidel and Ranjit Jhala. In Proceedings of the ACM SIGPLAN Haskell Symposium, Gothenburg. 31 citations.
- 2013 *Abstract Refinement Types*. **Niki Vazou**, Patric M. Rondon and Ranjit Jhala. In Proceedings of the 22nd European Symposium on Programming, Rome. 62 citations.
- 2011 *Memory Safety and Race Freedom in Concurrent Programming with Linear Capabilities*. **Niki Vazou**, Michalis Papakyriakou and Nikolaos Papaspyrou. In Proceedings of the Federated Conference on Computer Science and Information Systems, Poland.

---

## Selected Talks

- 2018 Keynote, Haskell eXchange, London.
- 2018 Keynote, ZuriHac, Switzerland.
- 2018 Seminar 18172, Algebraic Effect Handlers go Mainstream, Dagstuhl.
- 2018 Invited speaker, Programming Languages Mentoring Workshop, California.
- 2017 Keynote, Type-Level Scala, New York.
- 2017 Paper Presentation, Haskell Symposium, Oxford.
- 2017 Invited lecturer, Semantics of Effects, Resources, and Applications, Shonan.
- 2017 Invited tutorial, Programming Language Design and Implementation, Spain.
- 2017 Invited talk, Lambda Days, Poland.
- 2017 Invited talk, University of Pennsylvania.
- 2017 Invited talk, Massachusetts Institute of Technology.
- 2016 Seminar 16112, From Theory to Practice of Algebraic Effects and Handlers, Dagstuhl.
- 2016 Seminar 16131, Language Based Verification Tools for Functional Programs, Dagstuhl.
- 2016 Paper Presentation, Practical Aspects of Declarative Languages, Florida.
- 2016 Invited talk, University of Hawaii.
- 2016 Invited talk, University of Maryland.
- 2016 Invited talk, Facebook, California.
- 2016 Invited talk, University of Athens.
- 2016 Invited tutorial, Commercial Users of Functional Programming, Japan.
- 2015-2017 Programming Languages and Systems of Southern California, 2015, 2016, 2017.
- 2015 Paper Presentation, International Conference on Functional Programming, Vancouver.
- 2015 Invited tutorial, Commercial Users of Functional Programming, Canada.
- 2014 Paper Presentation, International Conference on Functional Programming, Sweden.
- 2013-2016 Invited speaker, Programming Languages Seminar, Athens, 2013, 2014, 2016.
- 2013 Tutorial at Higher Order Program Analysis, New Orleans.
- 2013 Demo at Haskell Symposium. Boston.
- 2013 Paper Presentation, European Symposium on Programming, Rome.

---

## Service

- 2018 Co-chair of Workshop on Type-Driven Development, Missouri.
- 2017 Panelist at the National Science Foundation Research Initiation Initiative.
- 2017 Reviewer for the Swiss National Science Foundation in Mathematics, Natural and Engineering Sciences.
- 2016-2017 Reviewer for Mathematical Reviews.
- 2016 Reviewer for the Journal of Functional Programming.
- Program committee membership
- 2018 International Conference on Functional Programming, Missouri.
- 2018 European Symposium on Programming, Greece.
- 2018 Haskell Symposium, Missouri.
- 2018 Haskell Implementors Workshop, Greece.

- 2017 ML-Family Workshop, Oxford.
- 2017 Workshop on Higher-Order Programming with Effects, Oxford.
- 2017 Symposium on Practical Aspects of Declarative Languages, Paris.
- 2017 Haskell in Leipzig, Germany.
- 2017 Scala Symposium, Vancouver.
- 2016 Haskell Symposium, Japan, 2016.
- 2016 Workshop on Coalgebra, Horn Clause Logic Programming and Types, Edinburgh.
- 2016 Haskell Implementors Workshop, Japan.
- 2016 Symposium on Trends in Functional Programming, Maryland.
- 2016 Artifact Evaluation for POPL, Florida.
- 2016 Artifact Evaluation for PLDI, California.
- 2016 Symposium on Practical Aspects of Declarative Languages, Florida.
- 2016 Haskell in Leipzig, Germany.
- 2016 Scala Symposium, Amsterdam.

---

## Organizations

- 2017-present Member of The ACM SIGPLAN Haskell Symposium Steering Committee.
- 2016-present Member of Haskell.org Committee.
- Summer 2017 Co-organizer of Summer of Haskell.
  - 2015-2016 Event Coordinator at Graduate Women in Computing, UCSD.
  - 2014-now Prime Member at Hellenic Student Association, UCSD.

---

## References

### **Ranjit Jhala**

Computer Science & Engineering  
University of California, San Diego  
✉ jhala@cs.ucsd.edu

### **Daan Leijen**

Research In Software Engineering  
Microsoft Research, Redmond  
✉ daan@microsoft.com

### **David Van Horn**

Computer Science  
University of Maryland  
✉ dvanhorn@cs.umd.edu

---

## Updated

November 2017