



Vazou Niki

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Summary of CV

This section describes briefly a summary of your career in science, academic and research; the main scientific and technological achievements and goals in your line of research in the medium -and long- term. It also includes other important aspects or peculiarities.

I am an Assistant Research Professor at the IMDEA Software Institute in Madrid.

I obtained my PhD in 2016 from University of California, San Diego.

Before joining IMDEA in 2018, I held a postdoc position at the University of Maryland, College Park.

During my PhD, I interned at Awake Security and Microsoft Research Redmond and Cambridge.

My research interests are on functional programming, type systems, and automated verification.

My most influential project is Liquid Haskell, an extension to the Haskell programming language into a useful and usable theorem prover.

During my seven years of research activity I published 13 papers in highly prestigious conferences, including POPL, PLDI, ICFP, ESOP, VMCAI, and Haskell Symposium.

My h-index is 8 and I have 469 citations.

I have given keynotes to functional conferences, including Haskell eXchange and Zurihac, and invited talks at more than 10 universities. Further, I have participated in two IFIP Working Groups (IFIP 2.1 and 2.8), and three Dagstuhl and Shonan invitation only seminars.

I have been awarded the Microsoft Research Graduate Research Fellowship (for years 2014-2016) and won the UCSD CSE Gradual Award at 2015.

In 2018, I received a best paper award at OOPSLA for the paper Gradual Liquid Type Inference.

Scientific Service.

I am a member of the Haskell Symposium steering committee and the Haskell.Org committee.

I have chaired the Student Research Competition of POPL 2019, 2020 and the Haskell Implementor Workshop of ICFP 2019.

I have co-chaired the Programming Languages and Analysis for Security 2019, the Type-Driven Development Workshop and the Programming Languages Mentoring Workshop and ICFP 2018.

Since 2016, I have been a member of 21 committees, including POPL 2019, ICFP 2018, and ESOP 2018.

Teaching and supervising. I have so taught 1 seminar on UPM, 2 courses at University of Maryland and an one week workshop for Clubs of Science in Mexico. I have mentored 2 undergraduate and 3 graduate students.



General quality indicators of scientific research

This section describes briefly the main quality indicators of scientific production (periods of research activity, experience in supervising doctoral theses, total citations, articles in journals of the first quartile, H index...). It also includes other important aspects or peculiarities.

JCR articles, h Index

In my field, conference publications are the primary way of disseminating novel results. My conference publications include, among others:

- 7 papers with conferences CORE rank A * (flagship): 2 ICFP, 3 POPL, 1 PLDI and 1 OOSPLA.
- 2 papers with conferences CORE rank A (excellent): 2 ESOP.

CORE conference rankings are available at core.edu.au. I have published at the flagship conferences in functional programming (ICFP), programming language theory (POPL), and object-oriented programming (OOSPLA).

Key metrics according to Google Scholar

- h-index: 8
- Total number of citations: 469



Vazou Niki

Surname(s): **Niki**
Name: **Vazou**
NIE: **Y6865305-A**
ORCID: **0000-0003-0732-5476**
ScopusID: **54584397900**
Google Scholar: **<https://scholar.google.es/citations?user=ARcLTokAAAAJ>**
Date of birth: **20/07/1987**
Gender: **Female**
Nationality: **Greece**
Land line phone: **(0034) 911 01 22 - 02**
Email: **niki.vazou@imdea.org**
Mobile phone: **(0034) 666821182**
Personal web page: **<https://nikivazou.github.io>**

Current professional situation

Employing entity: FUNDACION IMDEA SOFTWARE
Professional category: Research Assistant Professor
Start date: 05/11/2018

Previous positions and activities

	Employing entity	Professional category	Start date
1	University of Maryland	Postdoctoral Researcher	10/01/2017
2	Awake Networks, Mountain View, USA.	Internship	15/06/2016
3	Microsoft Research, Redmond, USA.	Internship	15/06/2014
4	Microsoft Research, Cambridge, UK.	Internship	15/09/2013
5	Opa, Paris, French.	Internship	15/06/2012

- 1** **Employing entity:** University of Maryland
Professional category: Postdoctoral Researcher
Start-End date: 10/01/2017 - 02/11/2018
- 2** **Employing entity:** Awake Networks, Mountain View, USA.
Professional category: Internship
Start date: 15/06/2016 **Duration:** 3 months
- 3** **Employing entity:** Microsoft Research, Redmond, USA.
Professional category: Internship
Start date: 15/06/2014 **Duration:** 3 months

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4 **Employing entity:** Microsoft Research, Cambridge, UK.

Professional category: Internship

Start date: 15/09/2013

Duration: 3 months

5 **Employing entity:** Opa, Paris, French.

Professional category: Internship

Start date: 15/06/2012

Duration: 3 months



Education

University education

Doctorates

Doctorate programme: Computer Science

Degree awarding entity: University of California, San Diego

Date of degree: 10/12/2016

Language skills

Language	Listening skills	Reading skills	Spoken interaction	Speaking skills	Writing skills
English	C2	C2	C2	C2	C2
Greek, Modern (1453-)	C2	C2	C2	C2	C2

Teaching experience

Experience supervising doctoral thesis and/or final year projects

- Project title:** Information Flow Security for Multi-Tier Web Applications
Entity: University of Maryland
Student: James Parker
Date of reading: 15/01/2019
- Project title:** Verification of Algorithms using Liquid Haskell
Entity: National Technical University of Athens
Student: George Petrou
Date of reading: 20/07/2018
- Project title:** Comparing Liquid Haskell with Coq
Entity: University of Maryland
Student: Will Kunkel
Date of reading: 15/01/2018
- Project title:** Refinement Types for Ruby
Entity: University of Maryland
Student: Kazerounian
Date of reading: 01/09/2017



- 5** **Project title:** Type Based Synthesis
Entity: FUNDACION IMDEA SOFTWARE
Student: Panagiotis Bougoulas

Teaching experience in courses and seminars for university teacher training

- 1** **Type of event:** Seminar
Name of the event: Advanced Functional Programming & Verification
Organising entity: Universidad Politécnica de Madrid **Type of entity:** University
Hours of teaching: 18
Teaching date: 27/11/2019
- 2** **Type of event:** Course
Name of the event: CMSC498V: Advanced Functional Programming Languages
Organising entity: University of Maryland
Teaching date: 22/01/2018
- 3** **Type of event:** Course
Name of the event: CMSC330: Organization of Programming Languages
Organising entity: University of Maryland **Type of entity:** University
Teaching date: 28/08/2017
- 4** **Type of event:** Seminar
Name of the event: Liquid Haskell: Refinement Types for Haskell
Organising entity: Shonan **Type of entity:** Technological Centre
Hours of teaching: 3
Teaching date: 15/05/2017
- 5** **Type of event:** Workshop
Name of the event: Haskell; Programming with Functions
Organising entity: Clubes De Ciencia **Type of entity:** Innovation and Technology Centres
Hours of teaching: 56
Teaching date: 17/08/2015



Scientific and technological experience

Scientific or technological activities

R&D projects funded through competitive calls of public or private entities

Name of the project: Contratos inteligentes y Blockchains Escalables y Seguros (BLOQUES)

Entity where project took place: FUNDACION IMDEA SOFTWARE

Name principal investigator (PI, Co-PI....): Juan Caballero Bayerri

Nº of researchers: 40

Funding entity or bodies:

Comunidad de Madrid

Type of entity: Public

City funding entity: Madrid, Community of Madrid, Spain

Start-End date: 01/01/2019 - 31/12/2022

Total amount: 763.600 €

R&D non-competitive contracts, agreements or projects with public or private entities

Name of the project: LiquidHaskell-verified parallel code; NSF Award, CCF

Degree of contribution: Researcher

Name principal investigator (PI, Co-PI....): Ranjit Jhala; Ryan Newton; Niki Vazou

Nº of researchers: 3

Participating entity/entities: Indiana University; UC San Diego

Start date: 01/07/2019

Duration: 3 years

Total amount: 453.000 €

Scientific and technological activities

Scientific production

Publications, scientific and technical documents

- 1** Martin Handley; Niki Vazou; Graham Hutton. Liquidate your assets: Reasoning about resource usage in Liquid Haskell. Principles of Programming Languages. 2020.
Type of production: Scientific paper **Format:** Scientific and technical document or report
- 2** James Parker; Niki Vazou; Michael Hicks. Information Flow Security for Multi-Tier Web Applications. Principles of Programming Languages. Lisbon(Portugal): ACM SIGPLAN, 2019.
Type of production: Scientific paper
- 3** Milod Kazerounian; Sankha Narayan Guria; Niki Vazou; Jeffrey Foster; David Van Horn. Type-Level Computations for Ruby Libraries. Programming Language Design and Implementation. pp. 966 - 979. 2019.
Type of production: Scientific paper
- 4** Niki Vazou; Éric Tanter; David Van Horn. Gradual Liquid Type Inference. Object-Oriented Programming, Systems, Languages & Application. 2 - 132, ACM on Programming Languages, 2018.
Type of production: Scientific paper
- 5** Niki Vazou; Anish Tondwalkar; Vikraman Choudhury; Ryan Newton; Philip Wadler; Ranjit Jhala. Refinement Reflection: Complete Verification with SMT.Principles of Programming Languages. 2 - 53, ACM on Programming Languages, 2018.
Type of production: Scientific paper **Format:** Journal
- 6** Niki Vazou; Austin Bourgerie; Jeffrey S. Foster; Emina Torlak. Refinement Types for Ruby. International Conference on Verification, Model Checking, and Abstract Interpretation. 10747, pp. 269 - 290. Lecture Notes in Computer Science, 2018.
Type of production: Scientific paper
- 7** Niki Vazou; Joachim Breitner; Rose Kunkel; David Van Horn; Graham Hutton. Theorem Proving for All. Haskell Symposium. 53 - 7, pp. 132 - 144. ACM SIGPLAN Notices, 2018.
Type of production: Scientific paper
- 8** Niki Vazou; Leonidas Lampropoulos; Jeff Polakow. A Tale of Two Provers. Haskell Symposium. 52 - 10, pp. 63 - 74. ACM SIGPLAN Notices - Haskell, 2017.
Type of production: Scientific paper
- 9** Niki Vazou; Daan Leijen. From Monads to Effects and Back. International Symposium on Practical Aspects of Declarative Languages. 9585, pp. 169 - 186. Lecture Notes in Computer Science, 2016.
Type of production: Scientific paper
- 10** Niki Vazou; Alexander Bakst; Ranjit Jhala. Bounded Refinement Types. International Conference on Functional Programming. 50 - 9, pp. 48 - 61. ACM SIGPLAN Notices - ICFP, 2015.
Type of production: Scientific paper

- 11** Eric Seidel; Niki Vazou; Ranjit Jhala. Type Targeted Testing. European Symposium on Programming. 9032, pp. 812 - 836. Lecture Notes in Computer Science, 2015.
Type of production: Scientific paper
- 12** Niki Vazou; Eric Seidel; Ranjit Jhala. Liquid Haskell: Refinement Types in the Real World. Haskell Symposium. 49 - 12, pp. 39 - 51. ACM SIGPLAN Notices - Haskell, 2014.
Type of production: Scientific paper
- 13** Niki Vazou; Eric Seidel; Ranjit Jhala; Dimitrios Vytiniotis; Simon Peyton-Jones. Refinement Types for Haskell. International Conference on Functional Programming. 49 - 9, pp. 269 - 282. ACM SIGPLAN Notices - ICFP, 2014.
Type of production: Scientific paper
- 14** Niki Vazou; Patric Rondon; Ranjit Jhala. Abstract Refinement Types. European Symposium on Programming. 7792, pp. 209 - 228. Lecture Notes in Computer Science, 2013.
Type of production: Scientific paper
- 15** Michalis Papakyriakou; Nikolaos Papaspyrou. Memory Safety and Race Freedom in Concurrent Programming with Linear Capabilities. Federated Conference on Computer Science and Information Systems. pp. 388 - 340. IEEE, 2011.
Type of production: Scientific paper

R&D management and participation in scientific committees

Scientific, technical and/or assessment committees

- 1** **Committee title:** Workshop on Gradual Typing (WGT'20)
Start date: 2020
- 2** **Committee title:** Conference on Computer-Aided Verification (CAV'20)
Start date: 2020
- 3** **Committee title:** Trends of Functional Programming (TFP'20)
Start date: 2020
- 4** **Committee title:** Principles of Programming Languages (POPL'19)
Start date: 2019
- 5** **Committee title:** European Symposium on Programming (ESOP'18)
Start date: 2018
- 6** **Committee title:** Haskell Symposium
Start date: 2018
- 7** **Committee title:** International Conference on Functional Programming (ICFP'18)
Start date: 2018



- 8** **Committee title:** Haskell in Leipzig
Start date: 2017
- 9** **Committee title:** ML-Family Workshop
Start date: 2017
- 10** **Committee title:** Scala Symposium
Start date: 2017
- 11** **Committee title:** Symposium on Practical Aspects of Declarative Languages
Start date: 2017
- 12** **Committee title:** Artifact Evaluation for PLDI
Start date: 2016
- 13** **Committee title:** Artifact Evaluation for POPL
Start date: 2016
- 14** **Committee title:** Haskell Implementors Workshop
Start date: 2016
- 15** **Committee title:** Haskell Symposium
Start date: 2016
- 16** **Committee title:** Haskell in Leipzin
Start date: 2016
- 17** **Committee title:** Scala Symposium
Start date: 2016
- 18** **Committee title:** Symposium on Practical Aspects on Declarative Languages
Start date: 2016
- 19** **Committee title:** Symposium on Trends in Functional Programming
Start date: 2016
- 20** **Committee title:** Workshop on Coalgebra, Horn Clause Logic Programming, and Types
Start date: 2016
- 21** **Committee title:** Workshop on Foundations of Computer Security (FCS'20)



Organization of R&D activities

- 1** **Title of the activity:** Student Research Competition, POPL
Start date: 2020
- 2** **Title of the activity:** Haskell Implementor's Workshop
Type of activity: Workshop
Start date: 2019
- 3** **Title of the activity:** Programming Languages and Analysis for Security
Type of activity: Workshop **Geographical area:** European Union
Convening entity: CCS
City convening entity: London,
Start date: 2019
- 4** **Title of the activity:** Student Research Competition, POPL
Start date: 2019
- 5** **Title of the activity:** Programming Languages Mentoring Workshop, ICFP, Missouri.
Start date: 2018
- 6** **Title of the activity:** Workshop on Type-Driven Development, Missouri.
Start date: 2018
- 7** **Title of the activity:** Co-organizer of Summer of Haskell.
Start date: 2017

R&D management

- 1** **Name of the activity:** Member of The ACM SIGPLAN Haskell Symposium Steering Committee
Start date: 2017
- 2** **Name of the activity:** Member of Haskell.org Committee.
Start date: 2016 **Duration:** 3 years



Other achievements

Prizes, mentions and distinctions

- 1** **Description:** UMD Victor Basili Postdoctoral Fellowship.
Awarding entity: University of Maryland **Type of entity:** University
Conferral date: 01/12/2018
- 2** **Description:** UCSD CSE Graduate Award for Research.
Awarding entity: University of California, San Diego
Conferral date: 10/12/2015
- 3** **Description:** Microsoft Research Graduate Research Fellowship.
Awarding entity: Microsoft Research
Conferral date: 2014