

Curriculum Vitae

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Gowtham Kaki

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❖ Research Focus

Automatic Reasoning for Data-Intensive Application Safety.

❖ Education

PhD — Computer Science

Aug 2019

Purdue University, USA

Thesis: **Automatic Reasoning Techniques for Non-Serializable Data-Intensive Applications**

Advisor: Suresh Jagannathan

Master of Science — Computer Science

May 2016

Purdue University, USA

Bachelor of Engineering (Hons.) — Computer Science

Jul 2009

BITS Pilani, India

❖ Experience

Assistant Professor, University of Colorado - Boulder

Aug 2020 – present

Post-Doctoral Researcher, Purdue University

Jan 2020 – Jul 2020

Visiting Assistant Professor, Purdue University

Aug 2019 – Dec 2019

Google Research Fellow, Purdue University

May 2018 – Jul 2019

Research Assistant, Purdue University

Jun 2013 – Apr 2018

Advisor: Suresh Jagannathan

Teaching Assistant, Purdue University

Aug 2012 – Dec 2012

Introduction to Programming in C (CS240)

Jan 2013 – May 2013

Programming Languages (CS565)

Research Intern, Microsoft Research, India

May 2014 – Aug 2014, &

Advisor: G Ramalingam

Jun 2015 – Aug 2015

Software Engineer, Yahoo!, India

Jul 2009 – Jul 2011

❖ Major Recognitions

- **Google PhD Fellowship 2018** for exceptional research in Computer Science and related disciplines.
- **Maurice H. Halstead Memorial Award** for outstanding research in Software Engineering, Purdue University, 2019.
- **“30 under 30”** award for outstanding accomplishments by a young alumnus, BITS Alumni Association (BITSAA), 2018.

❖ Journal Publications

Mergeable Replicated Data Types

Oct 2019

J4 Gowtham Kaki, Swarn Priya, KC Sivaramakrishnan, Suresh Jagannathan
Proceedings of the ACM on Programming Languages (PACMPL), issue OOPSLA 2019

Safe Replication through Bounded Concurrency Verification

Nov 2018

J3 Gowtham Kaki, Kapil Earanky, KC Sivaramakrishnan, Suresh Jagannathan
Proceedings of the ACM on Programming Languages (PACMPL), issue OOPSLA 2018

- J2 **Alone Together: Compositional Reasoning and Inference for Weak Isolation** Jan 2018
Gowtham Kaki, Kartik Nagar, Mahsa Najafzadeh, Suresh Jagannathan
Proceedings of the ACM on Programming Languages (PACMPL), issue POPL 2018
- J1 **Representation without Taxation: A Uniform, Low-Overhead, and High-Level Interface to Eventually Consistent Key-Value Stores** Mar 2016
KC Sivaramakrishnan, Gowtham Kaki, Suresh Jagannathan
IEEE Data Engineering Bulletin, 39(1): 52 – 64
- ❖ **Conference Publications¹**
- C5 **RunTime-Assisted Convergence in Replicated Data Types** June 2022
Gowtham Kaki, Prasanth Prahlanan, Nicholas Lewchenko
International Conference on Programming Language Design and Implementation (PLDI 2022)
- C4 **Version Control Is For Your Data Too** May 2019
Gowtham Kaki, KC Sivaramakrishnan, Suresh Jagannathan
Summit on Advances in Programming Languages (SNAPL 2019)
- C3 **Safe Transferable Regions** Jul 2018
Gowtham Kaki, G Ramalingam
European Conference on Object-Oriented Programming (ECOOP 2018)
- C2 **Declarative Programming over Eventually Consistent Data Stores** Jun 2015
KC Sivaramakrishnan, Gowtham Kaki, Suresh Jagannathan
International Conference on Programming Language Design and Implementation (PLDI 2015)
- C1 **A Relational Framework for Higher-Order Shape Analysis** Sep 2014
Gowtham Kaki, Suresh Jagannathan
International Conference on Functional Programming (ICFP 2014)
- C0 **Novel adaptive scheduling algorithm for computational grid** Jan 2010
Sunita Bansal, Gowtham Kaki, Chittaranjan Hota
Internet Multimedia Services Architecture and Applications (IMSAA'09)
- ❖ **Workshop Publications & Tech Reports**
- W5 **Bolt-On Convergence in Mergeable Replicated Data Types** April 2022
Gowtham Kaki, Prasanth Prahlanan, Nicholas Lewchenko
Principles and Practice of Consistency for Distributed Data (PaPoC 2022)
- W4 **Fine-grained distributed consistency guarantees with effect orchestration** Apr 2018
Kia Rahmani, Gowtham Kaki, Suresh Jagannathan
Principles and Practice of Consistency for Distributed Data (PaPoC 2018)
- W3 **Mergeable Types** Sep 2017
Gowtham Kaki, KC Sivaramakrishnan, Samodya Abeysiriwardane, Suresh Jagannathan
ML Workshop (ML 2017)
- W2 **DaLi : Database as a Library** May 2017
Gowtham Kaki, KC Sivaramakrishnan, Thomas Gazagnaire, Anil Madhavapeddy, Suresh Jagannathan
Summit on Advances in Programming Languages (SNAPL 2017)
Oral Presentation
- W1 **A Lightweight Symbolic Execution Framework for Ruby-on-Rails** Jun 2016
Gowtham Kaki
PLDI Student Research Competition (PLDI SRC 2016)

¹Journal publications J2-J4 are also published in the corresponding conference proceedings. They are not repeated.

❖ Teaching

- CU Boulder
 - Principles of Programming Languages (CSCI3155), Spring'21 & '22
 - **Distributed Systems Verification (CSCI7000)**, Spring'21
 - **Foundations of Programming Languages (CSCI5535)**, Fall'21
- Purdue
 - Software Engineering (CS307), Fall 2019

❖ Research Grants

- Developing AI agents to Support Teaching Staff in Large Programming Classes, CU Boulder IRT seed grant (Co-PI)

❖ Service

- CS Dept., Graduate Committee (GradComm) Member, 2020-2021
- Program Committee (PC) Member: PLDI'23, OOPSLA'23, OOPSLA'22, ML'20
- Referee, TOPLAS 2022
- Artifact Evaluation Committee (AEC) Member: PLDI'16, ICFP'17, ICFP'18, ECOOP'19, and PLDI'19
- Organizer, Purdue PL (PurPL) Reading Group, Oct 2013 – Dec 2016.
- Expert Advisor, **GradRight Inc.**, Oct 2018 – Aug 2019
- Student Volunteer, PLDI'16

❖ Travel Grants & Scholarships

- ACM SIGPLAN PAC funding: ICFP'14 and OOPSLA'18.
- ECOOP travel funding, 2018.
- ACM SIGPLAN PLMW scholarship, 2014.
- BITS Pilani merit-cum-need scholarship, Aug 2005 – Dec 2008.

❖ References

Suresh Jagannathan

Samuel D. Conte Professor of Computer Science
Department of Computer Science
Purdue University
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West Lafayette, IN 47906, USA
suresh@cs.purdue.edu

G Ramalingam

Principal Researcher & ACM Fellow
Programming Languages and Tools Group
Microsoft Research India
Vigyan, No. 9, Lavelle Road
Bengaluru, 560001, India
grama@microsoft.com

Ranjit Jhala

Professor
Department of Computer Science & Engineering
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9500 Gilman Drive
La Jolla, CA 92093
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Tiark Rompf

Assistant Professor
Department of Computer Science
Purdue University
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KC Sivaramakrishnan

Assistant Professor
Department of Computer Science & Engineering
Indian Institute of Technology (IIT) Madras
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Tamil Nadu, India
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