

Curriculum Vitae

January 31, 2020

Gowtham Kaki

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❖ Research Focus

Automatic Reasoning for Data-Intensive Application Safety.

❖ Education

PhD — Computer Science

Aug 2019

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

Purdue University, USA

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

Visiting Assistant Professor, Purdue University

Aug 2019 – present

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

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|----|---|----------|
| | Mergeable Replicated Data Types | Oct 2018 |
| J4 | Gowtham Kaki, Swarn Priya, KC Sivaramakrishnan, Suresh Jagannathan
<i>Proceedings of the ACM on Programming Languages (PACMPL)</i> , issue OOPSLA 2019 | |
| | Safe Replication through Bounded Concurrency Verification | Nov 2018 |
| J3 | Gowtham Kaki, Kapil Earanky, KC Sivaramakrishnan, Suresh Jagannathan
<i>Proceedings of the ACM on Programming Languages (PACMPL)</i> , issue OOPSLA 2018 | |
| | Alone Together: Compositional Reasoning and Inference for Weak Isolation | Jan 2018 |
| J2 | Gowtham Kaki, Kartik Nagar, Mahsa Najafzadeh, Suresh Jagannathan
<i>Proceedings of the ACM on Programming Languages (PACMPL)</i> , 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 **Version Control Is For Your Data Too** May 2019
 Gowtham Kaki, KC Sivaramakrishnan, Suresh Jagannathan
Summit on Advances in Programming Languages (SNAPL 2019)
- C4 **Safe Transferable Regions** Jul 2018
 Gowtham Kaki, G Ramalingam
European Conference on Object-Oriented Programming (ECOOP 2018)
- C3 **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)
- C2 **A Relational Framework for Higher-Order Shape Analysis** Sep 2014
 Gowtham Kaki, Suresh Jagannathan
International Conference on Functional Programming (ICFP 2014)
- C1 **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 **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)
- W4 **Mergeable Types** Sep 2017
 Gowtham Kaki, KC Sivaramakrishnan, Samodya Abeysiriwardane, Suresh Jagannathan
ML Workshop (ML 2017)
- W3 **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**
- W2 **A Lightweight Symbolic Execution Framework for Ruby-on-Rails** Jun 2016
 Gowtham Kaki
PLDI Student Research Competition (PLDI SRC 2016)
- W1 **Safe Memory Regions for Big Data Processing** Jan 2016
 Gowtham Kaki, G Ramalingam, Kapil Vaswani, Dimitrios Vytiniotis
Microsoft Tech Report
- ❖ **Teaching**
- Course Instruction at Purdue University
 - Software Engineering (CS307), Fall 2019
 - Teaching Assistantship at Purdue University
 - Introduction to Programming in C (CS240), Aug 2012 – Dec 2012.
 - Programming Languages (CS565), Jan 2013 – May 2013.

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

❖ Talks

Mergeable Replicated Data Types

OOPSLA 2019, Athens

Oct 2019

Shonan Seminar on Programming Language Support for Data-Intensive Applications, Japan

Jul 2019

Automatic Reasoning in the Absence of Serializability

Jul 2019

Phd Defense, Purdue University

Version Control Is For Your Data Too

May 2019

SNAPL 2019, Brown University

Safe Replication through Bounded Concurrency Verification

OOPSLA 2018, Boston

Nov 2018

Purdue PL (PurPL) Seminar

Nov 2018

Mid-West PL Summit, University of Wisconsin, Madison

Oct 2018

Safe Transferable Regions

Jul 2018

ECOOP 2018, Amsterdam

Alone Together: Compositional Reasoning and Inference under Weak Isolation

POPL 2018, Los Angeles

Jan 2018

Mid-West PL Summit, Indiana University, Bloomington

Dec 2017

Mergeable Types

ML Workshop 2017, Oxford, UK

Sep 2017

Purdue PL (PurPL) Seminar

Aug 2017

Quelea: Declarative Programming under Eventual Consistency

PLDI 2015, Portland

Jun 2015

Mid-West Verification, University of Illinois, Urbana-Champaign

Oct 2015

Microsoft Research India Intern Day, Bangalore

Jul 2015

Catalyst: A Relational Framework for Higher-Order Shape Analysis

Dagstuhl Seminar on Verification Tools for Functional Programs, Dagstuhl, Germany

Apr 2016

Mid-West Verification, University of Missouri, Columbia

Oct 2014

ICFP 2014, Gothenburg, Sweden

Sep 2014

❖ Service

- 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.