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

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
Introduction to Programming in C (CS240) *Aug 2012 – Dec 2012*
Programming Languages (CS565) *Jan 2013 – May 2013*

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 2018*
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

Alone Together: Compositional Reasoning and Inference for Weak Isolation *Jan 2018*
J2 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** KC Sivaramakrishnan, Gowtham Kaki, Suresh Jagannathan *IEEE Data Engineering Bulletin, 39(1): 52 – 64*	*Mar 2016*

❖ Conference Publications[1]

C5	**Version Control Is For Your Data Too** Gowtham Kaki, KC Sivaramakrishnan, Suresh Jagannathan *Summit on Advances in Programming Languages (SNAPL 2019)*	*May 2019*
C4	**Safe Transferable Regions** Gowtham Kaki, G Ramalingam *European Conference on Object-Oriented Programming (ECOOP 2018)*	*Jul 2018*
C3	**Declarative Programming over Eventually Consistent Data Stores** KC Sivaramakrishnan, Gowtham Kaki, Suresh Jagannathan *International Conference on Programming Language Design and Implementation (PLDI 2015)*	*Jun 2015*
C2	**A Relational Framework for Higher-Order Shape Analysis** Gowtham Kaki, Suresh Jagannathan *International Conference on Functional Programming (ICFP 2014)*	*Sep 2014*
C1	**Novel adaptive scheduling algorithm for computational grid** Sunita Bansal, Gowtham Kaki, Chittaranjan Hota *Internet Multimedia Services Architecture and Applications (IMSAA'09)*	*Jan 2010*

❖ Workshop Publications & Tech Reports

W5	**Fine-grained distributed consistency guarantees with effect orchestration** Kia Rahmani, Gowtham Kaki, Suresh Jagannathan *Principles and Practice of Consistency for Distributed Data (PaPoC 2018)*	*Apr 2018*
W4	**Mergeable Types** Gowtham Kaki, KC Sivaramakrishnan, Samodya Abeysiriwardane, Suresh Jagannathan *ML Workshop (ML 2017)*	*Sep 2017*
W3	**DaLi : Database as a Library** Gowtham Kaki, KC Sivaramakrishnan, Thomas Gazagnaire, Anil Madhavapeddy, Suresh Jagannathan *Summit on Advances in Programming Languages (SNAPL 2017)* **Oral Presentation**	*May 2017*
W2	**A Lightweight Symbolic Execution Framework for Ruby-on-Rails** Gowtham Kaki *PLDI Student Research Competition (PLDI SRC 2016)*	*Jun 2016*
W1	**Safe Memory Regions for Big Data Processing** Gowtham Kaki, G Ramalingam, Kapil Vaswani, Dimitrios Vytiniotis *Microsoft Tech Report*	*Jan 2016*

❖ 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.

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[1]Journal 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.

❖ References

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