**Gowtham Kaki**
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**Research Focus** Applying language design and automated reasoning techniques to simplify programming complex real-world systems.

**Education**

**Ph.D., Computer Science**. 2012 - present
Advised by Prof. Suresh Jagannathan.
Purdue University, West Lafayette, IN.

**M.S., Computer Science**. May, 2016
Purdue University, West Lafayette, IN.
GPA: 3.77/4.0

**B.E.(Hons)., Computer Science**. July, 2009
BITS, Pilani, India.
GPA: 8.68/10.0

**Publications**

Gowtham Kaki, KC Sivaramakrishnan, and Suresh Jagannathan. Version Control is for Your Data Too. In the proceedings of Symposium on Advances in Programming Languages (SNAPL), 2019.

Gowtham Kaki, Kapil Earanky, KC Sivaramakrishnan, and Suresh Jagannathan. Safe Replication through Bounded Concurrency Verification. In the proceedings of ACM SIGPLAN Conference on Object-Oriented Programming Systems Languages and Applications (OOPSLA), 2018.

Gowtham Kaki, and G Ramalingam. Safe Transferable Regions. In the proceedings of the European Conference on Object-Oriented Programming (ECOOP), 2018.

Gowtham Kaki, Kartik Nagar, Mahsa Najafzadeh, and Suresh Jagannathan. Alone Together: Compositional Reasoning and Inference for Weak Isolation. In the proceedings of ACM SIGPLAN Conference on Principles of Programming Langauges (POPL), 2018.

KC Sivaramakrishnan, Gowtham Kaki, and Suresh Jagannathan. Representation without Taxation: A Uniform, Low-Overhead, and High-Level Interface to Eventually Consistent Key-Value Stores. In IEEE Data Engineering Bulletin, 2016.

KC Sivaramakrishnan, Gowtham Kaki, and Suresh Jagannathan. Declarative Programming over Eventually Consistent Data Stores. In the proceedings of ACM SIGPLAN Conference on Programming Languages Design and Implementation (PLDI), 2015.

Gowtham Kaki, and Suresh Jagannathan. A Relational Framework for Higher-Order Shape Analysis. In the proceedings of ACM SIGPLAN International Conference on Functional Programming (ICFP), 2014.

Sunita Bansal, Gowtham Kaki, and Chittaranjan Hota. A Novel Adaptive Scheduling Algorithm for Computational Grids. In the proceedings of IEEE International Conference on Internet Multimedia Systems Architecture and Application (IMSAA), 2009.

**Preprints/Drafts** Gowtham Kaki, Swarn Priya, KC Sivaramakrishnan, and Suresh Jagannathan. Relational Reasoning for Mergeable Replicated Data Types. Under submission to OOPSLA

2019.

Gowtham Kaki, KC Sivaramakrishnan, Samodya Abeysiriwardane, and Suresh Jagannathan. Mergeable Types. Extended abstract presented at ML Workshop, 2017.

Gowtham Kaki, and Suresh Jagannathan. A Lightweight Symbolic Execution Framework for Ruby-on-Rails. Extended abstract presented at PLDI 2016 Student Research Competition (SRC).

**Professional Experience**

**Research Intern, Microsoft Research India, Bangalore**
(May - August, 2014 & July-August, 2015) Built a region type system and region type inference to ensure the safety of dataflow programs that rely on programmer-managed memory regions, instead of garbage collection for memory management.

**Software Engineer, Yahoo SDC, Bangalore, India** August, 2009 - July, 2011
Frontend engineering for Yahoo content platforms group. Developed AJAX and php tools for querying, processing and presenting loosely-structured data from various content grids inside yahoo. The tools were used by Yahoo's content curators.

**Engineering intern, Qualcomm, Hyderabad, India** January - June, 2009
QA Engineering for Application-specific integrated circuit (ASIC) - User interface module (UIM) group. Developed tools to test low-level mobile network code.

**Awards and Fellowships**

- BITS Alumni Association (BITSAA)'s "30 under 30" award for excellence in academic research[1].
- Purdue CS's Maurice H. Halstead Memorial Award (2019) for outstanding research in Software Engineering[2].
- Google PhD Fellowship, 2018[3].
- ACM SIGPLAN PAC funding for ICFP'14 and OOPSLA'18.
- ECOOP travel funding, 2018.
- ACM SIGPLAN PLMW scholarship, 2014.
- Institute merit-cum-need scholarship during all semesters of my undergraduate education at BITS Pilani, India.

**Professional Service**

- Served on Artifact Evaluation Committees (AECs) of PLDI'16, ICFP'17, ICFP'18, ECOOP'19, and PLDI'19.
- Started the Purdue PL (PurPL) reading group in Fall, 2013, which has since taken a life of its own to become an umbrella organization for all PL groups at Purdue[4].
- Served on Purdue CS Graduate Student Board (GSB), 2011-2012.
- Served as the Secretary of Computer Science Association (CSA) at BITS Pilani, 2007-08.

**References**

Prof. Suresh Jagannathan (Purdue University), Dr. Ganesan Ramalingam (Microsoft Research), & Prof. KC Sivaramakrishnan (IIT Madras). Other references will be available on request.

[1] https://www.bitsaa.org/page/30U30
[2] https://www.cs.purdue.edu/news/articles/2019/2019-cs-award-banquet.html
[3] https://ai.googleblog.com/2018/04/announcing-2018-google-phd-fellows-for.html
[4] http://purduepl.github.io/