Siva Kesava Reddy Kakarla

Computer Science (PhD), UCLA

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Interests

I am a fourth year PhD Student in the Network Verification (NetVerify) Group at University of California, Los Angeles. My research interests lie at the intersection of Networks and Programming Languages.

Education

2017 – Present **M.S. and Ph.D. in Computer Science.**
University of California, Los Angeles (UCLA), CA, USA.
CGPA: 4.0 / 4.0.
Advisors: *Prof. Todd Millstein* and *Prof. George Varghese*

2013 – 2017 **B. Tech. in Computer Science and Engineering (*Honors*).**
Indian Institute of Technology, Kharagpur, India.
CGPA: 9.67 / 10.0.

Publications

SIGCOMM'21 **CAMPION: Debugging Router Configuration Differences**
Alan Tang, Siva Kesava Reddy Kakarla, Ryan Beckett, Ennan Zhai, Matt Brown, Todd Millstein, Yuval Tamir, George Varghese.
Proceedings of the 2021 ACM SIGCOMM 2021 Conference, pages 748–761.
Artifact https://github.com/atang42/batfish/tree/rm-localize

SIGCOMM'20 **GROOT: Proactive Verification of DNS Configurations.** ⟦Best Student Paper Award⟧
Siva Kesava Reddy Kakarla, Ryan Beckett, Behnaz Arzani, Todd Millstein, George Varghese.
Proceedings of the Conference of the ACM Special Interest Group on Data Communication, SIGCOMM 2020, pages 310–328.
Artifact https://github.com/dns-groot/2020_SIGCOMM_Artifact_157

NSDI'20 **Finding Network Misconfigurations by Automatic Template Inference (SELFSTARTER).**
Siva Kesava Reddy Kakarla, Alan Tang, Ryan Beckett, Karthick Jayaraman, Todd Millstein, Yuval Tamir, George Varghese.
Proceedings of the 17th USENIX Symposium on Networked Systems Design and Implementation, NSDI 2020, pages 999–1013.
Artifact https://github.com/SivaKesava1/SelfStarter

arXiv'19 **Expect More from the Network: DDoS Mitigation by FITT in Named Data Networking.**
Zhiyi Zhang, Vishrant Vasavada, Siva Kesava Reddy Kakarla, Eric Osterweil, and Lixia Zhang.

CoRR, abs-1902-09033.

GLOBECOM'17 **IEEE 802.11ac DBCA: A Tug of War between Channel Utilization and Fairness.** Mahankali Saketh, Siva Kesava Reddy Kakarla, Raja Karmakar, Samiran Chattopadhyay, Sandip Chakraborty.
Proceedings of the IEEE Global Communications Conference, 2017, pages 1–6.

Awards and Honors

2021 Finalist (top 3.5%) for the Facebook PhD Fellowship Program
2020 "Best Student Paper" award at the ACM SIGCOMM 2020
2018–2019 UCLA Dean's Graduate Student Research (GSR) Fellowship
2017 UCLA Graduate Dean's Scholar Award (GDSA), the prestigious award offered to the department's top incoming PhD student
2013 – 2017 JBNSTS Scholarship
2013 All India Rank-330 in IIT-JEE Advance
2013 All India Rank-229 in Joint Entrance Examination(JEE) Mains
2011 – 2013 KVPY Fellowship from Dept. of Science and Technology, India

Talks and Presentations

May '21 "So you think your Nameservers are Correct?": Finding Errors Automatically in Nameserver Implementations – DNS-OARC 35 *Virtual*
Aug '20 GRoot – The 2020 ACM SIGCOMM Conference *Virtual*
Jul '20 GRoot – Intentionet *Virtual*
Feb '20 SelfStarter – The 2020 NSDI Conference *Santa Clara, CA*
Sep '19 GRoot – MNR Group, Microsoft Research *Redmond, WA*
Aug '19 SelfStarter – Intentionet and Microsoft Research *Seattle/Redmond, WA*

Research Experience

UCLA (Graduate RA) **Finding Errors Automatically in DNS Nameserver Implementations**
with *Ryan Beckett (MSR), Prof. Todd Millstein*, and *Prof. George Varghese* *Fall '20 – Present*

Google (Intern) **Finding Topology Errors by Graph Templating of Google Metro Networks**
with *Jayaram Mudigonda, and Anees Shaikh*, NetInfra Group. *Summer '20*

Microsoft (Intern, Remote) **GRoot: Proactive Verification of DNS Configurations**
with *Ryan Beckett, Behnaz Arzani (MNR Group, MSR), Prof. Todd Millstein*, and *Prof. George Varghese* *Summer '19 – Spring '20*

UCLA (Graduate RA) **Finding Network Misconfigurations by Automatic Template Inference**
with *Ryan Beckett (Mobility and Networking group, Microsoft Research), Karthick Jayaraman (Windows Azure security group, Microsoft), Prof. Todd Millstein, Prof. Yuval Tamir*, and *Prof. George Varghese* *Summer '18 – Summer '19*

UCLA (Course Project) **Producer-Assisted Pushback**
with *Prof. Lixia Zhang*, Internet Research Lab. *Winter '18 – Spring '18*

IIT Kharagpur **Does QUIC Kill Your Data Plan? A View Using YouTube Adaptive Streaming Clients**

(UG Thesis) with *Prof. Sandip Chakraborty*, Complex Network Research Group (CNeRG). *Fall '16 – Spring '17*

IIT Kharagpur **IEEE 802.11ac DBCA: A Tug of War Between Channel Utilization & Fairness**

(UG RA) with *Prof. Sandip Chakraborty*, Complex Network Research Group (CNeRG). *Fall '16 – Spring '17*

IISc Bangalore **Experimenting with Akka Package**

(Intern) with *Prof. Komondoor V. Raghavan*, Compilers, PL and SE Group. *Summer '15*

Professional Experience

LinkedIn **Enhancement of LinkedIn spam detection tool with dependency injection model and Mockito unit tests**

(Intern) with *Prashanth Nimmagadda*, Content Filtering & Spam Detection Team. *Summer '16*

Teaching Experience

UCLA **CS 118 – Computer Network Fundamentals** *Fall '19*

Graduate Teaching Assistant