

## Shreesha G. Bhat

Department of Computer Science  
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### RESEARCH INTERESTS

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Distributed Systems, Storage Systems, Operating Systems, Networking

### EDUCATION

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**University of Illinois Urbana-Champaign** 2023 - 2028 (expected)

PhD in Computer Science | Advisors: [Ram Alagappan](#), [Aishwarya Ganesan](#) | CGPA: 4.0/4.0

**Indian Institute of Technology, Madras** 2018 - 2023

Dual Degree (BTech + MTech) in Computer Science & Engineering | Advisor: [Kartik Nagar](#) | CGPA: 9.66/10.00

### PUBLICATIONS

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- SOSP '24** LazyLog: A New Shared Log Abstraction for Low-Latency Applications  
[Xuhao Luo](#), [Shreesha G. Bhat\\*](#), [Jiyu Hu\\*](#), [Ramnatthan Alagappan](#), [Aishwarya Ganesan](#) (\*equal contribution)  
The 30<sup>th</sup> Symposium on Operating Systems Principles (SOSP) 2024
- FMCAD '23** Automating Cutoff-based Verification of Distributed Protocols  
[Shreesha G. Bhat](#), [Kartik Nagar](#)  
Formal Methods in Computer-Aided Design (FMCAD) 2023
- DISC '21** Brief Announcement: Automating and Mechanising Cutoff Proofs for Parameterized Verification of Distributed Protocols  
[Shreesha G. Bhat](#), [Kartik Nagar](#)  
35<sup>th</sup> International Symposium on Distributed Computing (DISC) 2021

### RESEARCH EXPERIENCE

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**Improving Latencies in Shared Log Architectures** | DASSL Lab, UIUC Aug '23 – present

Research Assistant | Guide: [Ram Alagappan](#), [Aishwarya Ganesan](#)

- Designing and implementing new shared log abstractions that unlock low latencies for client applications.

**Improving Cloud Reliability through Systematic Testing** | Microsoft Research India Aug '22 – Jul '23

Research Intern | Guide: [Akash Lal](#)

- Worked on improving reliability of Azure Cloud Services using concurrency testing tools such as [Coyote](#) for C++ programs.
- Built a deterministic concurrency testing framework for a production scale replication library, [Azure RSL](#), which provides an implementation of the Paxos consensus algorithm. Implemented several optimizations to improve state-space coverage.

**Parameterized Verification of Distributed Protocols** | IIT Madras Sep '20 – Jul '23

Young Research Fellow | Guide: [Kartik Nagar](#)

- Investigated cutoff-based techniques for verifying that distributed protocols meet their specification irrespective of the size of the parameter they are instantiated with (such as number of nodes).
- Proposed a framework to mechanize simulation based proofs for cutoffs and applied the approach on a variety of distributed protocols using Z3 as a backend SMT solver.

### SCHOLASTIC ACHIEVEMENTS

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- Secured prizes for excellent academic performance in the 1<sup>st</sup>, 2<sup>nd</sup>, 7<sup>th</sup> and 8<sup>th</sup> semesters at IIT Madras.
- Secured All India Rank of **851** and **619** in JEE (Joint Entrance Examination) Advanced & Mains 2018
- Qualified for KVPY fellowship with an All India Rank of **142**
- Selected as a undergraduate research fellow as part of the (YRF) program
- Among the **top 300** in India qualified to write national olympiad examinations for Physics, Chemistry and Astronomy (INPhO, INChO, INAO)

### SKILLS

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- **Languages** C, C++, Python, Golang, OCaml
- **Tools & Frameworks** RDMA, Z3, L<sup>A</sup>T<sub>E</sub>X, Git