Neil Giridharan

CONTACT INFORMATION

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RESEARCH INTERESTS

Distributed systems, Distributed computing, Byzantine Fault Tolerance (BFT)

EDUCATION

University of California, Berkeley, Berkeley, California USA

Ph.D. Candidate, Computer Science, August 2020 (expected graduation date: May 2025)

- Research Topic: Byzantine Fault Tolerant (BFT) consensus protocols
- Advisor: Natacha Crooks

University of California, Berkeley, Berkeley, California USA

B.A., Computer Science, May, 2020

HONORS AND AWARDS

Meta Research PhD Fellowship, 2022

Kimball Fellowship, 2020

ACADEMIC EXPERIENCE

University of California, Berkeley, Berkeley, California USA

Graduate Student **August, 2020 - present**

Includes current Ph.D. research, Ph.D. level coursework and research projects.

Graduate Student Instructor

- CS294-234 Distributed Systems and Distributed Computing, Spring 2023.
- CS294-177/194-177 Special Topics on Decentralized Finance, Fall 2021.

PUBLICATIONS

Neil Giridharan, Florian Suri-Payer, Matthew Ding, Heidi Howard, Ittai Abraham, and Natacha Crooks. BeeGees: Stayin' Alive in Chained BFT. ACM PODC, 2023.

Alexander Spiegelman, **Neil Giridharan**, Alberto Sonnino, and Lefteris Kokoris-Kogias. Bullshark: DAG BFT Protocols Made Practical. ACM CCS, 2022.

Michael Whittaker, Ailidani Ailijiang, Aleksey Charapko, Murat Demirbas, **Neil Giridharan**, Joseph M. Hellerstein, Heidi Howard, Ion Stoica, and Adriana Szekeres. Scaling Replicated State Machines with Compartmentalization. VLDB, 2021.

Michael Whittaker, **Neil Giridharan**, Adriana Szekeres, Joseph M. Hellerstein, Heidi Howard, Faisal Nawab, and Ion Stoica. Matchmaker Paxos: A Reconfigurable Consensus Protocol. JSys, 2021

Michael Whittaker, **Neil Giridharan**, Adriana Szekeres, Joseph M. Hellerstein, and Ion Stoica. A Generalized Multi-Leader State Machine Replication Tutorial. JSys, 2021.

PREPRINTS

Neil Giridharan, Heidi Howard, Ittai Abraham, Natacha Crooks, and Alin Tomescu. No-Commit Proofs: Defeating Livelock in BFT. ePrint 2021.

Professional Experience

VMware Research Group, Palo Alto, California USA

Research Intern **May, 2022 - August, 2022**

Designed a new consensus protocol, BeeGees, that has better performance under failures, wrote safety and liveness proofs, and built a simulation verifying the better commit latency.

Novi @ Meta Research, Menlo Park, California USA

Research Intern **May, 2021 - August, 2021**

Designed a new DAG consensus protocol, Bullshark, that had lower latency than Tusk, added an asynchronous fallback path to Bullshark that guaranteed liveness during asynchrony, and helped implement a prototype in the Narwhal codebase in Rust.

VMware Research Group, Palo Alto, California USA

Research Intern **June, 2020 - August, 2020**

Designed a new consensus protocol, Wendy, that had lower latency than HotStuff, added a fast path to Wendy to optimistically commit in one round trip, and implemented a prototype in Go.

Computer Skills

- Java, C++, C, Python, Scala, Go, Rust, SQL, Bash.