

Nibesh Shrestha

Research Interests

Byzantine fault tolerant consensus protocols, Blockchains, Distributed Key Generation, Random Beacons, Order fair consensus

Education

- 2017–present **Ph.D. Computer Science**, *Rochester Institute of Technology*, Rochester, NY, USA.
Advisors: Pengcheng Shi (RIT), Kartik Nayak (Duke), GPA: 3.89
- 2009–2013 **B.E. Electronics and Communication Engineering**, *Tribhuvan University*, Lalitpur, Nepal.
GPA: 3.81

Publications

default ordering – alphabetical

Otherwise, by contribution order. (* denotes equal contribution)

- 2023 Ittai Abraham, Kartik Nayak, **Nibesh Shrestha**. Communication and Round Efficient Parallel Broadcast Protocols *In Submission*
- 2022 **Nibesh Shrestha**, Adithya Bhat, Aniket Kate, Kartik Nayak. Synchronous Distributed Key Generation without Broadcasts *IACR Cryptology ePrint Archive*, 2021:1635, 2021.
- 2021 Adithya Bhat*, **Nibesh Shrestha***, Aniket Kate, Kartik Nayak. OptRand - Optimistically Responsive Distributed Random Beacons *Network and Distributed System Security Symposium (NDSS)*, February 27– March 3, 2023, San Diego, California
- 2021 Ittai Abraham, Kartik Nayak, **Nibesh Shrestha**. Optimal Good-case Latency for Rotating Leader Synchronous BFT *Principles of Distributed Systems (OPODIS)*, December 13-15, 2021, Strasbourg, France, **Best Paper Award**
- 2021 Justin Kim, Vandan Mehta, Kartik Nayak, **Nibesh Shrestha**. Brief Announcement: Making synchronous BFT protocols secure in the presence of mobile sluggish faults *ACM PODC* July 26-30, 2021, Virtual Event
- 2020 Adithya Bhat*, **Nibesh Shrestha***, Aniket Kate, Kartik Nayak. RandPiper - Reconfiguration-Friendly Random Beacons with Quadratic Communication *ACM CCS* November 14-19, 2021, Virtual Event
- 2020 **Nibesh Shrestha**, Ittai Abraham, Ling Ren, Kartik Nayak. On the Optimality of Optimistic Responsiveness. *ACM CCS* November 9–13, 2020, Virtual Event, USA
- 2019 **Nibesh Shrestha**, Mohan Kumar, Sisi Duan. Revisiting hBFT: Speculative Byzantine Fault Tolerance with Minimum Cost. *arXiv preprint arXiv:1902.08505*, 2019.
- 2019 **Nibesh Shrestha**, Mohan Kumar. Revisiting EZBFT: A Decentralized Byzantine Fault Tolerant Protocol with Speculation. *arXiv preprint arXiv:1909.03990*, 2019.

Professional Employment

- Fall 2022 **Research Intern**, *ChainLink Labs*, New York, NY.
Mentor: Dahlia Malkhi
- Summer 2021 **Associate in Research**, *Duke University*, Durham, NC.
- Summer 2020 **Associate in Research**, *Duke University*, Durham, NC.

- 2019-present **Graduate Teaching and Research Assistant**, *Rochester Institute of Technology*, Rochester, NY.
Graduate Teaching Assistant for Analysis of Algorithms.
- 2017-2019 **Graduate Research Assistant**, *Rochester Institute of Technology*, Rochester, NY.
- 2015-2017 **Freelance Software Developer**, *Upwork Global Inc.*, Cambridge, MA.
- 2016-2017 **Senior Software Engineer**, *FFL Design Inc.*, Meridian, ID.
- 2017 **Senior Software Engineer (part-time)**, *DjangoForce LLC*, Boise, ID.
- 2014-2015 **Senior Software Engineer**, *n.Locate Pvt. Ltd.*, Lalitpur, Nepal.

Skills

Programming Languages.

C++, GoLang, Python, GoLang, Java, Matlab, VHDL, C, C#, Javascript, PHP

Software Artifacts

C++ Code for OptRand, <https://github.com/nibeshrestha/optrand/>.

C++ Code for Rotating Leader BFT, <https://github.com/nibeshrestha/simplesync/>.

C++ Code for OptSync, <https://github.com/nibeshrestha/optsync/>.

Talks and Presentations

- Oct 2022 **Synchronous Distributed Key Generation without Broadcasts.**
CESC 2022
- Dec 2021 **Optimal Good-case Latency for Rotating-Leader Synchronous BFT.**
OPODIS 2021
- Nov 2021 **RandPiper: Reconfiguration Friendly Random Beacons with Quadratic Communication.**
ACM CCS 2021
- Nov 2020 **On the Optimality of Optimistic Responsiveness.**
ACM CCS 2020

Academic Service

External Reviewer for ACM CCS (2023, 2022, 2021), IEEE S&P (2022), FC (2022, 2021), PerCom (2020), JPDC (2020).

Awards and Honors

- 2023 **NDSS Student travel grant.**
- 2022 **CESC Student travel grant.**
- 2021 **OPODIS Best Paper Award.**
- 2017-2019 **RIT PhD Merit Scholarship.**
- 2009-2013 **The College Fellowship Scholarship.**
Tuition waiver for 4 years of undergraduate studies for BE in Electronics and Communication Engineering

References

Pengcheng Shi

Professor & Director
Computing and Information Sciences
Rochester Institute of Technology
✉ [spcast \[at\] cs.rit.edu](mailto:spcast@cs.rit.edu)

Kartik Nayak

Assistant Professor
Department of Computer Science
Duke University
✉ [kartik \[at\] cs.duke.edu](mailto:kartik@cs.duke.edu)

Aniket Kate

Associate Professor
Department of Computer Science
Purdue University
✉ `aniket [at] purdue.edu`

Ittai Abraham

Senior Researcher
VMware Research
✉ `iabraham [at] vmware.com`