


Rooji Jinan

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About me

I currently work as a Research Fellow at the School of Electrical and Electronics Engineering, Nanyang Technological University, Singapore. Prior to this, I was working at Qualcomm (Bangalore, India) as a Senior Engineer. At Qualcomm I have worked on topics related to digital twins for 5G networks, deep learning models for digital twins, 5G wireless channel modeling, capacity planning etc. I have been working at Qualcomm since July 2022, and prior to this I was pursuing PhD at the Robert Bosch centre for cyberphysical systems, Indian Institute of Science (IISc), Bangalore, India in the area of low latency communication and distributed processing. I was also a teaching faculty affiliated to APJ Abdul Kalam Technological University, India from 2016 to 2017. I have a Bachelors and a Masters degree in the field of Electronics & Communication Engineering and Communication Engineering & Signal Processing respectively from the University of Calicut, India.

Education

- Indian Institute of Science, Bangalore, India** *Aug 2017 – Mar 2023*
Doctor of Philosophy (PhD)
- Coursework CGPA: 9.4/10.0
 - **Thesis:** Minimizing latency in data acquisition, distributed processing and retrieval for applications in cyber-physical systems, URL: <https://etd.iisc.ac.in/handle/2005/6029> 
- University of Calicut, India** *Aug 2013 – July 2015*
Master of Technology in Communication Engineering and Signal Processing
- Course GPA: 9.4/10.0
- University of Calicut, India** *Aug 2008 – July 2012*
Bachelor of Technology in Electronics and Communication Engineering
- Percentage: 83.67, Secured **University Rank 2** (Second topper) for B.Tech Degree Examinations – ECE (2008-12)

Research areas

Wireless channel modeling, Performance optimization in 5G networks, AI applied to network digital twins, Low latency distributed computing and processing, Modeling and performance evaluation of networked systems

Experience

- Senior Engineer (5G Research)** *India*
Qualcomm *July 2022 – Oct 2025*
- Assistant Professor** *India*
APJ Abdul Kalam Technological University *July 2016 - June 2017*

Publications

1. **R. Jinan**, A. Badita, T. Bodas, and P. Parag, “Load balancing policies without feedback using timed replicas,” *Performance Evaluation*, vol. 162, p. 102381, Nov. 2023, doi: <https://doi.org/10.1016/j.peva.2023.102381>.
2. **R. Jinan**, G. Gautam, P. Parag, and V. Aggarwal, “Asymptotic Analysis of Probabilistic Scheduling for Erasure-Coded Heterogeneous Systems,” *ACM SIGMETRICS Performance Evaluation Review*, vol. 50, no. 4, pp. 8–10, Apr. 2023, doi: <https://doi.org/10.1145/3595244.3595248>.
3. **R. Jinan**, A. Badita, P. Sarvepalli, and P. Parag, “Latency Optimal Storage and Scheduling of Replicated Fragments for Memory Constrained Servers,” *IEEE Transactions on Information Theory*, vol. 68, no. 6, pp. 4135–4155, Feb. 2022, doi: <https://doi.org/10.1109/tit.2022.3152182>.
4. **R. Jinan**, A. Badita, P. Sarvepalli, and P. Parag, “Low latency replication coded storage over memory-constrained servers,” *2022 IEEE International Symposium on Information Theory (ISIT)*, Melbourne, Aus-

tralia, 2021, pp. 2340–2345, doi: <https://doi.org/10.1109/isit45174.2021.9517901>.

5. **R. Jinan**, P. Parag, and H. Tyagi, “Tracking an Auto-Regressive Process with Limited Communication per Unit Time,” *Entropy*, vol. 23, no. 3, pp. 347–347, Mar. 2021, doi: <https://doi.org/10.3390/e23030347>.
6. **R. Jinan**, P. Parag, and H. Tyagi, “Tracking an Auto-Regressive Process with Limited Communication,” *2022 IEEE International Symposium on Information Theory (ISIT)*, Los Angeles, CA, USA, 2020, vol. 159, pp. 2462–2467, doi: <https://doi.org/10.1109/isit44484.2020.9174338>.
7. **R. Jinan** and T. Raveendran, “Particle Filters for Multiple Target Tracking,” *Procedia Technology*, vol. 24, pp. 980–987, Jan. 2016, doi: <https://doi.org/10.1016/j.protcy.2016.05.215>.

Preprints

1. **R. Jinan**, A. Badita, T. Bodas, and P. Parag, “Load balancing policies without feedback using timed replicas,” arXiv (Cornell University), Jan. 2020, doi: <https://doi.org/10.48550/arxiv.2010.13575>.
2. A. Badita, **R. Jinan**, B. Vamanan, and P. Parag, “Modeling Performance and Energy trade-offs in Online Data-Intensive Applications,” arXiv (Cornell University), Aug. 2021, doi: <https://doi.org/10.48550/arXiv.2108.08199>

Skills

Programming skills: Python, MATLAB, familiar with C, C++

Deep learning library: PyTorch

Familiar areas: Probability, Random processes, Signal processing, Image processing, Queuing theory, Information theory & coding, Data analytics, Estimation and detection theory, Machine learning, Graph neural networks, Wireless channel modeling

Teaching experience

Teaching Assistant, Indian Institute of Science, Bangalore, India *2019, 2020, 2021*

- **Course taught :** E2 202 Random Processes
- **Responsibilities :** Conducting tutorials including both lecture and problem solving sessions, setting examination questions, grading exam sheets and assignments

Assistant Professor, APJ Abdul Kalam Technological University, India *July 2016 - June 2017*

- **Rating:** 4.7/5
- **Courses taught :** EC 202 Signals and Systems, EC 205 Electronic Circuits, EC 100 Basics of Electronics Engineering, BE 101-04 Introduction to Electronics Engineering, EC 110 Electronics Engineering Workshop, EC 231 Electronic Devices and Circuits Lab, EC 233 Electronic Design Automation Lab
- **Responsibilities :** Planning and conducting lecture and lab sessions, setting exams, grading exam sheets, assignments, documentation work for yearly department audits by university, aiding facilitation of centralised exam conduction by university at college level

Awards

- Cisco-Centre for Networked Intelligence PhD fellowship, 2019
- RBCCPS PhD fellowship, 2020
- Cisco-Centre for Networked Intelligence PhD fellowship, 2021

Personal details

- **DOB:** 28th May 1991
- **Gender:** Female
- **Marital Status:** Married
- **Nationality:** Indian

References

- **Parimal Parag**,
Associate Professor, Indian Institute of Science, Bangalore, India
email: parimal@iisc.ac.in
- **Rajeev Kumar**,
Principal Engineer/Manager, Qualcomm, Bangalore, India
email: rajvkuma@qti.qualcomm.com