

Anand Rajaraman and Venky Harinarayan Institute Chair:

An overview of the Contributions by various Alumni Donors with significant contributions from **Mr. Anand Rajaraman** and **Mr. Venky Harinarayan**. This report encapsulates the activities that have taken up in driving the initiatives planned on Blockchain Technology.

BLOCKCHAIN TECHNOLOGY

We are promoting one of the state of art research and explorations as that keeps the young minds excited and futuristic. One of the active and applied area for cryptology and secure distributed computing being blockchain technology.



Activities conducted on BLOCKCHAIN TECHNOLOGY:

Prof.C Pandu Rangan has taken several initiatives to bring several activities on board. Some of the activities are as given below:

1. Introduced a c course on "Foundations of Blockchain technology" and was very well received by over 90 students registering for them.
2. Completed more than 10 UG projects and 5 B Tech projects and an MS project in the blockchain area.
3. Prof.Pandu Rangan was the chief investigator for a funded project, (RBIC) on Proxy technology, Funded by Ochain Inc, USA to the tune of 45000 USD.
4. A boot camp was conducted on blockchain technology with international speakers at TIFR, Bangalore, in Jan 2020. (3-day intense program).
5. Delivered a comprehensive set of lectures (full course video graphed) for TEQIP, MHRD, at IIT, HYDERABAD, in Dec 2019.

6. Suvradip Chakraborty obtained his PhD, Dec 2019.

Kanika Gupta obtained her MS, July 2019 (Two MS thesis is under submission).



Summary of Research Activities:

Prof.C. Pandu Rangan, Department of Computer Science and Engineering, Anand Rajaraman and Venky Harinarayan, Chair Professor has done extensive research in the field. Some of the notable activities are detailed as given below:

In their research, there are two journal papers, one in A* kind and another in A kind of Journals:

- Both documents are the culmination of local efforts with international collaborations.
- The first paper has his undergraduates as coauthors and the second one has his PhD students as coauthors.

Journal Papers:

Ragavendran Gopalakrishnan, Dimitrios Kanoulas, Naga Naresh Karuturi, C.Pandurangan, Rajmohan Rajaraman, Ravi Sundaram:

Cache Me if You Can: Capacitated Selfish Replication Games in Networks. Theory Comput. Syst.64 (2): 272-310 (2020)



Suvradeep Chakraborty, Janaka Alawatugoda, C. Pandu Rangan, New approaches to practical LR-PKC, Journal of Mathematical Cryptology, 2020 (To appear). (accepted in NOV, 2019)

Conference Papers:

Some of the papers presented during conferences held during his tenure are as given below:

Mehul Kumar, Amit Kumar, C. Pandu Rangan:

- **Reoptimization of Path Vertex Cover Problem.** COCOON 2019: 363-374

Suvradip Chakraborty, C. Pandu Rangan:

- **Public Key Encryption Resilient to Post-challenge Leakage and Tampering Attacks.** CT-RSA 2019: 23-43

S. Sharmila Deva Selvi, Arinjita Paul, C. Pandu Rangan, Siva Dirisala, Saswata Basu:

- **Splitting and Aggregating Signatures in Cryptocurrency Protocols.** DAPPCON 2019: 100-108

S. Sharmila Deva Selvi, S. Harish, Swethashree Dhanabal, C. Pandu Rangan:

- **A Closer Look at Anonymous Proxy Re-Encryption Schemes.** SpaCCS 2019: 475-489

- Arinjita Paul, Vorapong Suppakitpaisarn and Chandrasekaran Pandurangan. **Smart Contract-driven Mechanism Design to Mitigate Information Diffusion in Social Networks, MARBLE, GREECE, 2019.**
- S. Sharmila Deva Selvi S, Arinjita Paul, Siva Dirisala, Saswata Basu and Chandrasekaran Pandurangan. **Sharing of Encrypted files in BlockChain Made Simpler, MARBLE, GREECE, 2019.**

Note:

Please note that Mehul Kumar was an undergraduate in IIT Madras, Suvradip was his PhD student, and CT-RSA is an A+ category conference.

- DAPCON is an IEEE conference, and the coauthors are from a blockchain company that funded the research.
- Dr.Vorapong is from Tokyo University and a collaborator under an INDO-Japan Project, Harish and Swethasree are UG interns from a local college (PSG Tech, Coimbatore)

Thus, the conference publications got generated through the efforts of PhD scholars, UG students, interns and international collaborators and senior researchers from a research project funding company.