

ICTS MONTHLY COLLOQUIUM

IT IS ENTROPY THAT COUNTS

We will discuss applications of Shannon entropy to problems in Combinatorics and Computer Science. We will see examples of inequalities in combinatorics where an informal justification based on considerations of information can be formalized using the notion of entropy. We will discuss the area of randomized two-party communication complexity and use entropy to derive lower bounds for the Set Disjointness problem. Finally, we will discuss Von Neumann entropy, the quantum-mechanical analog of Shannon entropy, and its application in the study of the quantum communication complexity of the Set Disjointness problem. The talk will be accessible to a general scientific audience; we will assume no prior familiarity with concepts from computer science, information theory, or quantum mechanics.



Jaikumar Radhakrishnan ICTS - TIFR, Bengaluru

Jaikumar Radhakrishnan is a theoretical computer scientist with research interests in complexity theory, randomness and computation, quantum information and computation, combinatorics, and information theory. He received his BTech in Computer Science and Engineering from IIT Kharagpur in 1985 and his PhD in Computer Science from Rutgers University, NJ, USA, in 1991. He joined TIFR in 1991, where he is currently a senior professor at the School of Technology and Computer Science (STCS), TIFR, Mumbai, and at the International Centre for Theoretical Sciences (ICTS-TIFR), Bengaluru.

03:30 PM, 14th November 2022

Zoom link: <https://tinyurl.com/mvmpxkbn>

Meeting ID: 854 1122 9299

Passcode: 141422

Madhava Lecture Hall,
ICTS, Bengaluru

