

Abstract:

Research can be viewed as a search of an accepting-state in an exponential-space. When we look in hind-sight after we find an accepting-state, can we identify a much shorter path than the one that was discovered by trial and error as the search actually proceeded?

In this talk I'll show that this is the case for Distributed-Computability: The discovery that different distributed problems have different levels of difficulty, and identifying the weakest model of distributed-computation that allows to solve a problem. I'll explain the essence of 40 years of research in an hour, by showing that if the right questions were asked at the right time, all the results could have been had in a span of time order-of-magnitude shorter.

Some of the major ideas in the talk were developed in works with Afek (TAU), and Borowsky (Akamai), Lynch (MIT), and Rajsbaum (UNAM).