Communication Complexity and Its Applications^{*}

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Abstract. For any function $f(x, y)$, its communication complexity is the minimum number of bits needed to be exchanged between two parties holding integers x and y respectively. Invented thirty years ago, communication complexity has been a central research area in theoretical computer science with rich applications to algorithmic problems. In this talk, we give an overview of computational complexity, highlighting several notable recent results and the diverse mathematical techniques needed for deriving such results.

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