The internet of things (IoT) improves pervasive sensing and control capabilities by connecting digital communication, signal processing, and massively deployed sensors. But low-cost, spatially distributed IoT sensor nodes with limited hardware and battery power, combined with the low latency needed to avoid unstable control loops, presents severe security challenges. By modifying data communications among IoT sensors, attackers can compromise any algorithm using the data for inference.

Professor Blum describes tight bounds on algorithms that estimate a parameter derived from the attacked data and communications, under any statistical model. The results hold regardless of the estimation algorithm adopted. Attacks that make the target data useless for reducing these bounds and applications to IEEE 1588 for clock synchronization are discussed.

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