

AMERICAN MATHEMATICAL SOCIETY JOSIAH WILLARD GIBBS LECTURE



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Privacy in the Land of Plenty

Abstract

Privacy-preserving data analysis has a large literature spanning several academic disciplines over more than half a century. Many early attempts have proved problematic in vivo or in vitro. “Differential privacy,” a notion tailored to situations in which data are plentiful, has provided a theoretically sound and powerful framework, has given rise to an explosion of research, and has begun to see deployment on a global scale. We will review the definition of differential privacy, illustrate with some examples, and describe surprising applications to statistical validity under adaptive analysis and fairness in machine-learning algorithms, settings in which privacy itself is not a concern.

Wednesday, January 10, 8:30–9:20 pm

Ballroom 6AB, Upper Level
San Diego Convention Center

The AMS Council established the Josiah Willard Gibbs Lectureship in 1923, making it one of the Society’s oldest and most prestigious lectures. Gibbs (b. 1839–d. 1903), a mathematical physicist, was one of the greatest scientists America has ever produced. This invited lecture is popular in nature, directed at those who are not professional mathematicians and intended to make the public aware of the contribution that mathematics is making to present-day thinking and modern civilization.

