

Anne-Sophie Charest

Laval University

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Statistical Disclosure Control and the Contributions of Differential Privacy

While statistical agencies would like to share their data with researchers, they must also protect the confidentiality of the data provided by their respondents. To satisfy these two conflicting objectives, agencies use various techniques to restrict and modify the data before publication. In the first part of this presentation, I will give an overview of this field of research, known as Statistical Disclosure Control (SDC). I will then introduce the rigorous criterion of differential privacy, which is designed to guarantee confidentiality even in a worst-case scenario by protecting the information of any individual in the database against an adversary with complete knowledge of the rest of the dataset. I will describe the contributions of differential privacy to the field of SDC, and present some of my work on the generation and proper analysis of differentially-private synthetic datasets.