WSS Roger Herriot Award Seminar



The winner of the 2026 Roger Herriot Award for Innovation in Federal Statistics, **Terrance Savitsky**, will be presenting a free virtual seminar hosted by WSS.

Title: Privacy Amplification for Synthetic Data Using Range Restrictions
Date/Time: November 18, 2026 from 3:00-4:00pm ET
Cost: Free!
Format: Virtual seminar hosted by instat.org
Link to register: https://instats.org/seminar/privacy-amplification-for-range-restrict

Co-authors: Monika (Jingchen) Hu (Binghamton Univeristy), Matthew Williams (U.S. Bureau of Labor Statistics)

Biography: Terrance Savitsky is a Senior Research Mathematical Statistician at the U.S. Bureau of Labor Statistics specializing in Bayesian methods for survey data.

Abstract: We introduce a new class of range-restricted formal data privacy standards that condition on owner's beliefs about sensitive data ranges. By incorporating this additional information, we can provide a stronger privacy guarantee (e.g., an amplification). The range-restricted formal privacy standards protect only a subset (or ball) of data values and exclude ranges (or balls) believed to be already publicly known. The privacy standards are designed for the risk-weighted pseudo posterior mechanism (PPM) used to generate synthetic data under an asymptotic differential (aDP) privacy guarantee. The PPM downweights the (log-)likelihood contribution for each record proportionally to its disclosure risk. The PPM is adapted under inclusion of beliefs by adjusting the risk-weighted pseudo likelihood. We introduce two alternative adjustments. The first expresses data owner's knowledge of the sensitive range as a probability, λ, that a datum value drawn from the underlying generating distribution lies outside the ball or subspace of values that are

sensitive. The portion of each datum likelihood contribution deemed sensitive is then $(1 - \lambda i) \leq 1$ and is the only portion of the likelihood subject to risk down-weighting. The second adjustment encodes knowledge as the probability masses $P(Ri) \leq 1$ between the edges of the sensitive range, Ri. We use the resulting conditional pseudo likelihood for a sensitive record, which boosts its worst case tail values away from 0. We compare privacy and utility properties for the PPM under the aDP and range-restricted privacy standards through a series of simulation studies and a real data application to an accelerated life testing dataset

More information on the Roger Herriot Award as well as the upcoming seminar can be found on the WSS website.
https://washstat.org/awards/herriot.html