MathAcrossCampus: More Data, More Problems

Daniela Witten, University of Washington

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Kane 210

In recent years, we have heard so much about the huge amounts of data that are now commonplace across virtually all fields. You might think that the main challenges associated with big data are computational ones, such as how to store the data and how to process it quickly. But it turns out that big data also leads to a whole new set of statistical challenges. Somewhat counterintuitively, as datasets become larger, the task of finding the signal in the data -- and distinguishing it from the noise -- becomes ever-more challenging. In this talk, I'll present some examples of the statistical challenges that result from very big data, with a focus on applications to biology.

Speaker Bio:

Daniela Witten is a professor of Statistics and Biostatistics at University of Washington, and the Dorothy Gilford Endowed Chair in Mathematical Statistics. Her research involves the development of statistical machine learning methods for high-dimensional data, with applications to genomics, neuroscience, and other fields. She is particularly interested in unsupervised learning, with a focus on graphical modeling.

Daniela is the recipient of a number of honors, including an NIH Director's Early Independence Award, a Sloan Research Fellowship, an NSF CAREER Award, a Simons Investigator Award in Mathematical Modeling of Living Systems, a David Byar Award, a Gertrude Cox Scholarship, and an NDSEG Research Fellowship. Her work has been featured in the popular media: among other forums, in Forbes Magazine (three times) and Elle Magazine, on KUOW radio (Seattle's local NPR affiliate station), in a NOVA documentary, and as a PopTech Science Fellow.

Daniela is a co-author (with Gareth James, Trevor Hastie, and Rob Tibshirani) of the very popular textbook "Introduction to Statistical Learning". She was a member of the National Academy of Medicine (formerly the Institute of Medicine) committee that released the report "Evolution of Translational Omics".

Daniela completed a BS in Math and Biology with Honors and Distinction at Stanford University in 2005, and a PhD in Statistics at Stanford University in 2010.

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