

THE MS2DISCOVERY INTERDISCIPLINARY RESEARCH INSTITUTE

WATERLOO | CANADA

Three Pillars of Data Science

Cameron Davidson-Pilon | Shopify

In this talk, I'll describe what I see the three pillars of data science are, and specifically how data scientists often fail at one of these pillars: causal inference. I'll provide three examples of where understanding causal inference has been necessary.

The first example is a classic causal inference result on a dataset involving infant mortality and birth weight. The example more generally applies as a cautionary lesson to anyone doing analytics.

The second example is a showcase of causal inference being used at Shopify to answer million dollar questions about shopping behaviour.

Finally, the third example is an application to fairness and unbiasedness in production machine learning systems.



Cameron Davidson-Pilon has worked in many areas of applied statistics, from the evolutionary dynamics of genes to modelling of financial prices. His contributions to the community include *lifelines*, an implementation of survival analysis in Python, *lifetimes*, and *Bayesian Methods for Hackers*, an open source book & printed book on Bayesian analysis. His previous education was at Wilfrid Laurier University, University of Waterloo and the Independent University of Moscow, and he currently works as a Director of Data Science at Shopify in Ottawa, Ontario.

Contact at the MS2Discovery Research Institute: Manuele Santoprete (Host of the speaker, Multidisciplinary Talk, Tectons 2,6,7 and others)

Refreshments will be provided

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The MS2Discovery Seminar Series: www.ms2discovery.wlu.ca/seminar
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