



Cornell CIS
Statistical Science

STATISTICS SEMINAR



Wednesday, September 20, 2017

4:15 pm

G01 Biotechnology

ANDREW GORDON WILSON

Operations Research and Information Engineering,
Cornell University

Bayesian Generative Adversarial Networks

Through an adversarial game, the recently proposed generative adversarial networks (GANs) can implicitly learn rich distributions over images, audio, and data which are hard to model with an explicit likelihood. In this talk, I will present a practical Bayesian formulation for unsupervised and semi-supervised learning with GANs. Within this framework, we use stochastic gradient Hamiltonian Monte Carlo for marginalizing parameters. The resulting approach can automatically discover complementary and interpretable generative hypotheses for collections of images. Moreover, by exploring an expressive posterior over these hypotheses, we show that it is possible to achieve state-of-the-art quantitative results on major image classification benchmarks even with less than 1% of the labelled training data.

The work will appear at NIPS 2017.

Andrew Gordon Wilson joined ORIE at Cornell University in August 2016 as an assistant professor. Previously, he was a research fellow in the Machine Learning Department at CMU with Eric Xing and Alex Smola. He completed his PhD in machine learning at the University of Cambridge. Andrew specializes in kernel methods, deep learning, and probabilistic modelling. His website is <https://people.orie.cornell.edu/andrew>.

Refreshments will be served following the seminar in 1181 Comstock Hall.