Introduction

Hi, my name is Gabriel Katz. I'm an associate professor of politics and quantitative methods at the University of Exeter. I'm also an affiliate member of Exeter Q step Centre. And in this video, I am going to go over some fundamental aspects of modern Bayesian computation. Drawing on a previous video made by my colleague, Andrei Zhirnov, also from Exeter Q Step.

In particular, I'm going to start taking, by taking a look at the nuts and bolts of Bayesian, of modern Bayesian computation. Focusing on the two most widely use of Bayesian algorithms, namely the Gibbs Sampler, and the Metropolis Hastings. I will then review some of the criteria used to assess model convergence, namely, when once I run my Bayesian model, when can I be sure that, sure that the model is ready to be used to draw inferences about parameters.

I will then discuss some of the goodness of fit criteria, which we use in the Bayesian world, which differ from those used in frequency statistics. And I will end up by discussing methods to speed up conversion or speed up execution time. As you may know, and I'm very partial about this the Bayesian approach, the Bayesian differential approach has a lot of advantages. It has one big disadvantage, which is typically feeding based models in a Bayesian fashion takes a lot of time. So I'm going to review two ways in which we can reduce execution time when we estimate, I'm always innovation fashion.

First, I'm going to talk about the integration of R code and c++ code through the use of Rccp, which as I will show you, significantly reduce the time needed to execute to estimate them all. And then I'm going to go one step beyond that and I'm going to talk about the integration of R and Rccp. But in the cloud, so within cloud computing,

Throughout this video, and even the slides that accompany this video, there are several exercises and examples of the application of the concepts I will be discussing. You have in the accompanying materials, you have data and codes that will allow you to practice to reinforce the concepts and to hopefully become in love with the Bayesian statistical paradigm.