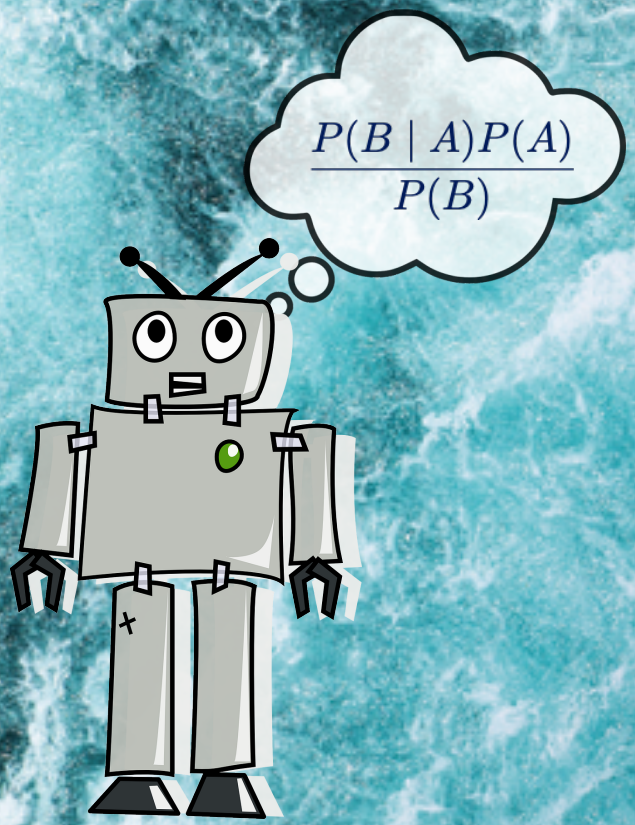
Hamilton virtual Student Seminar Series



Robotic Grasping with Machine Learning

Anna Konrad

Variational Inference: a brief introduction

Alessandra Lemos dos Santos

When: 13th October 11:00
Where: Zoom @ tinyurl.com/y5ak6ezv

Robotic Grasping with Machine Learning

Abstract
Using robots as assistants in domestic environments has been an active field of research over the last few years. While industrial robots have structured and well-defined workspaces, robots in domestic environments do not. One subproblem here is the task of robotic grasping, where machine learning can be used for grasp detection and grasp quality prediction. I'll present a convolutional neural network for grasp quality prediction (GQCNN) and highlight its usage and limitations.

Anna Konrad

Variational Inference - a brief introduction

Abstract

In Bayesian statistics, one of the most important problems concerns the calculation of the posterior distributions, which in more complex models, is difficult to obtain. In view of this, it is necessary to resort to approximations of these distributions. For years, Markov chain Monte Carlo (MCMC) has been the dominant paradigm in approaching a posteriori distributions. However, the MCMC method is notoriously slow. In our presentation, we will review Variational Inference (VI), a method to approximate probability densities, which turns the inference problem into an optimization problem. We will address the key ideas behind the method, make a comparison with MCMC, and present some examples.

Alessandra Lemos dos Santos