

Lecture 1 : Introduction

Thursday, 12 January 2023 6:15 PM

FOUNDATIONS

"Basics"

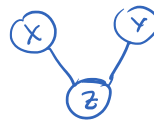
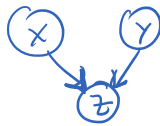
X, Y, Z
 $p(X) \quad p(Y) \quad p(Z)$
 $p(X, Y, Z)$



+ "simple" learning / inference

⇓
"structure"

PGM



+ inference!

————— Quiz + Recess —————

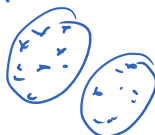
"models, models, models"

Simple —————> Complex
Discrete/linear Cont/non-linear

mixture model

- clustering

"latent variable"



prob PCA "linear"
- dim red.



"non-linear"

Variational Autoencoder (VAE)

- rep. learning /
generative modeling



Sequential VAE
"world model"

Hidden Markov Model
- sequence modeling



Linear Dynamical System
- Kalman filtering

