Discussion
Discussion

● Objective
  ○ Old problem, interesting approach
    ■ Use (scarse) labels to help unsupervised algorithm
  ○ Detect anomalies on seasonal time series
Discussion

- Contributions
  - Algorithm with “solid theoretical explanation”
    - KDE interpretation
  - Methodology
    - Sliding window with length W
    - M-ELBO
      - “Exclude the contribution of anomalies and missing points”
    - MCMC imputation
      - Interesting
Discussion

- Contributions (cont.)
  - Generative model
  - Why use a NN?
    - Already assuming $N(\mu, \sigma)$
Discussion

● Contributions (cont.)
  ○ Why Bayesian?
Discussion

● Methodology
  ○ Some details are not clear
    ■ L = 1 when training. What about evaluation?
    ■ How should K be chosen?
      ● “It is difficult to choose a good K in totally unsupervised scenario, thus we leave it as a future work.”
    ■ What about the detection threshold?
    ■ Window W
Discussion

● Methodology (cont.)
  ○ Why avoid using marginal $p(x)$?
    ■ Reconstruction probability
  ○ Why use Missing Data Injection?
  ○ Sub-Optimal Equilibrium
Discussion

● Results
  ○ Donut compared to vanilla VAE and Opprentice (supervised)
  ○ Overlapping CIs…
  ○ AUC, best F1-Score, alert delay