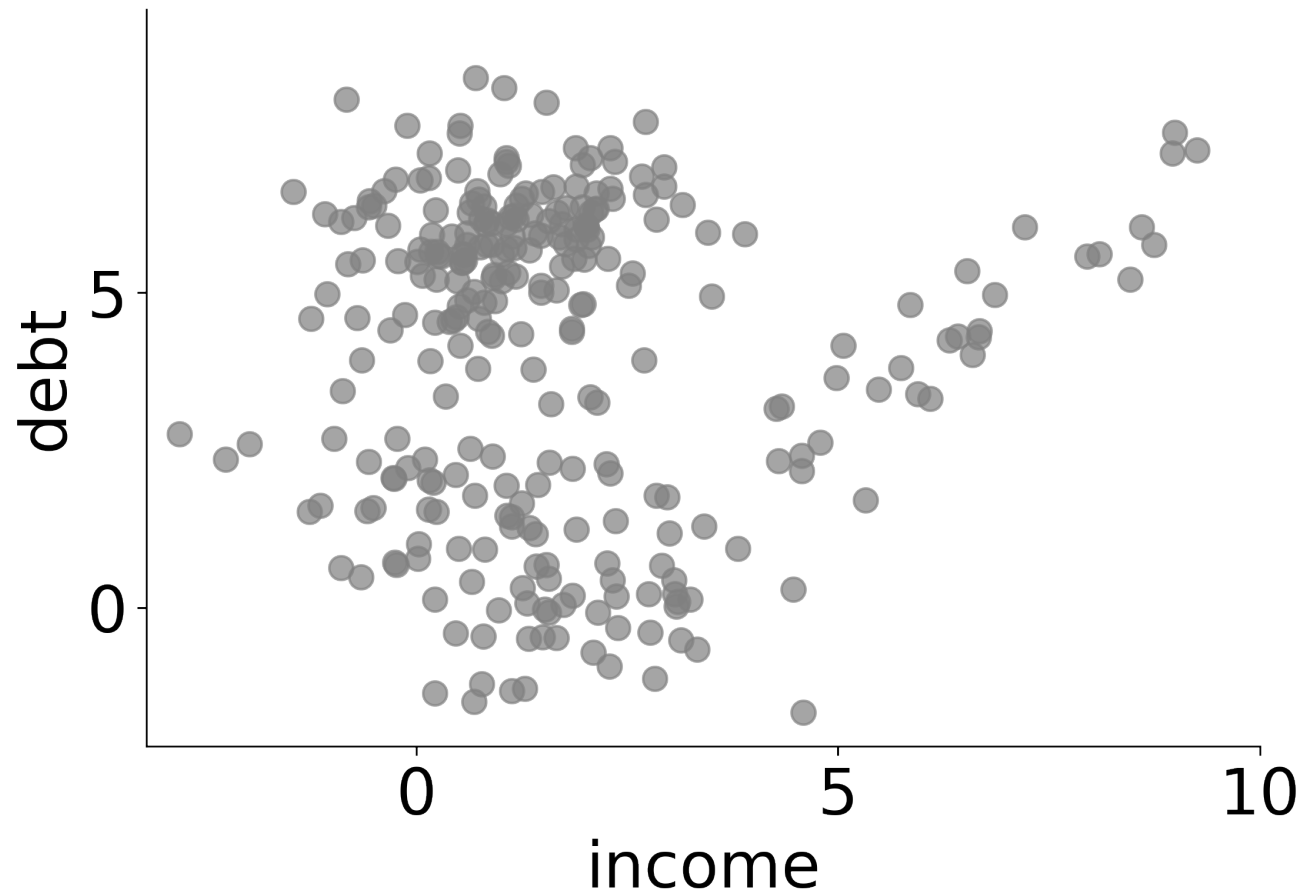
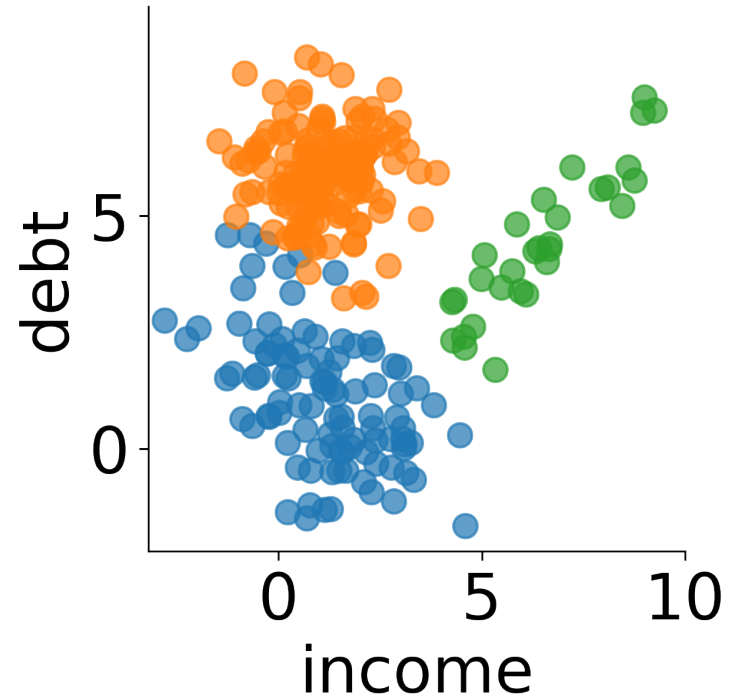
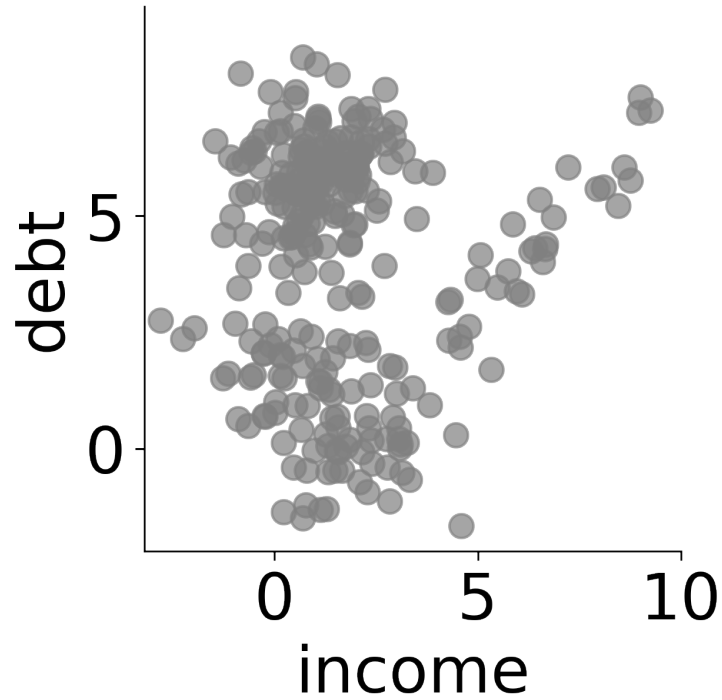


Probabilistic clustering

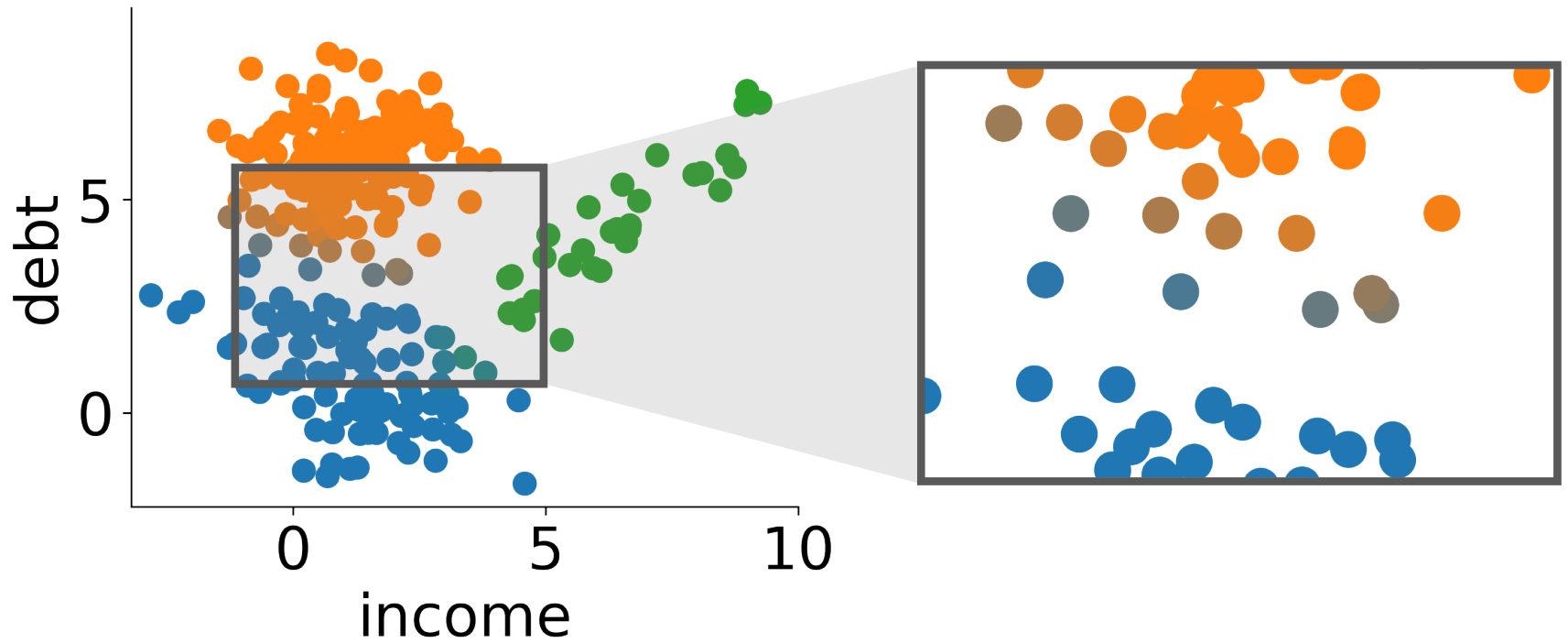
Clustering



Hard clustering

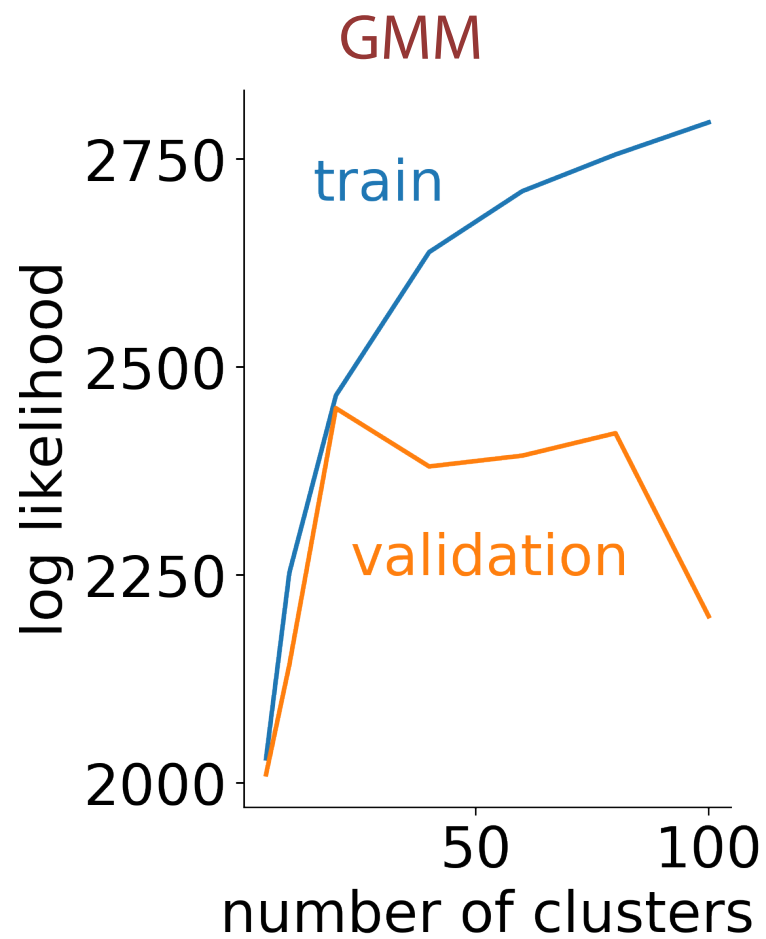


Soft clustering

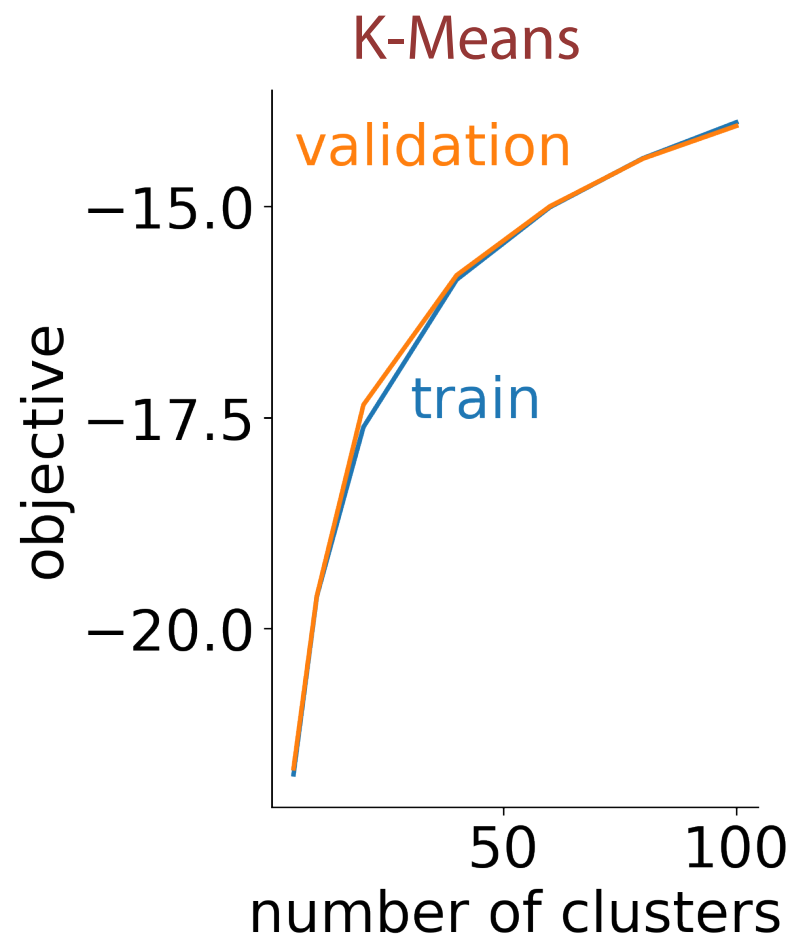
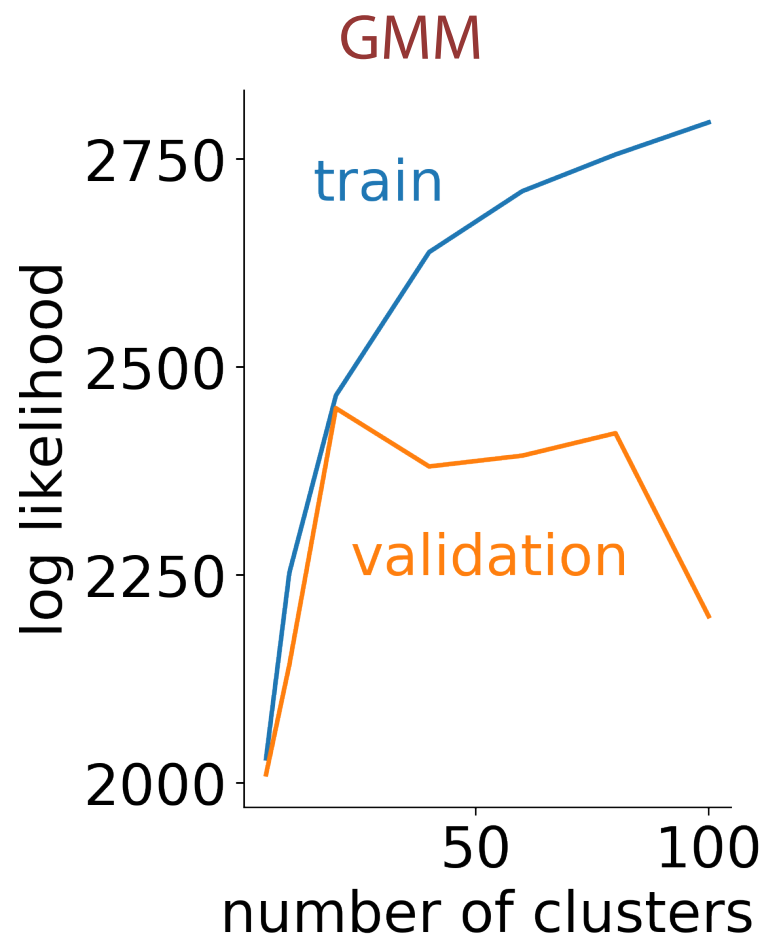


$p(\text{cluster idx} \mid x)$
instead of
 $\text{cluster idx} = f(x)$

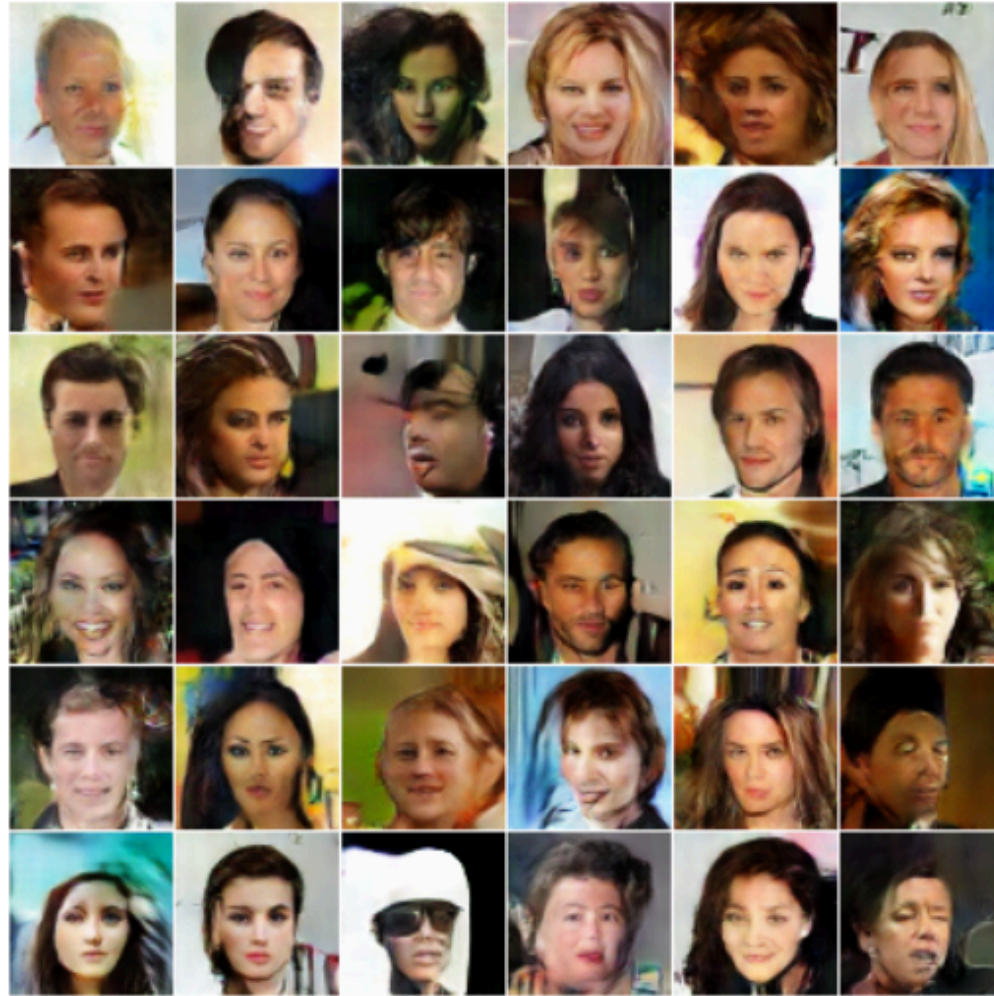
Hyperparameter tuning



Hyperparameter tuning



Generating new data points



Junbo Zhao, <https://arxiv.org/pdf/1609.03126.pdf>

Summary

Want to cluster data in a soft way

- Allows to tune hyper parameters
- Generative model of the data

