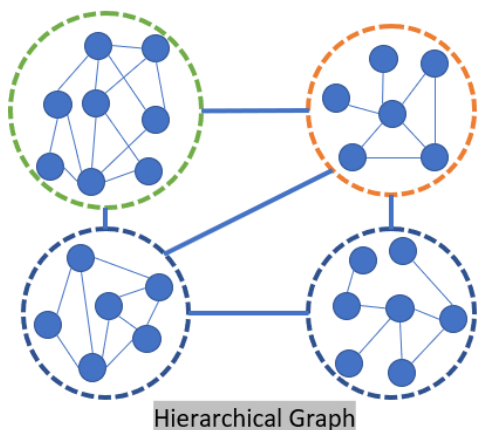


Prof. Jia LI



Deep Graph Learning, Graph Neural Networks
Data Mining
Worked in Google AI and Tencent
AP in DSA & CSE

Graph Representation



Application



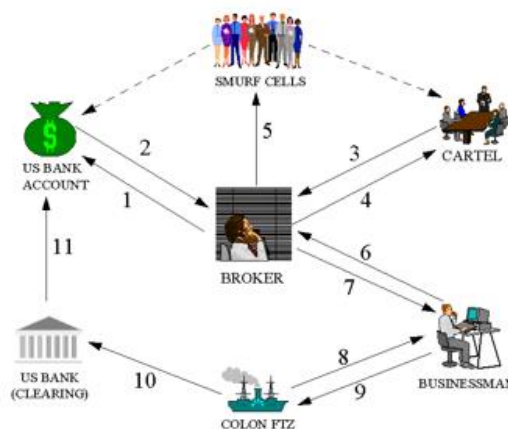
Tencent
AI Lab



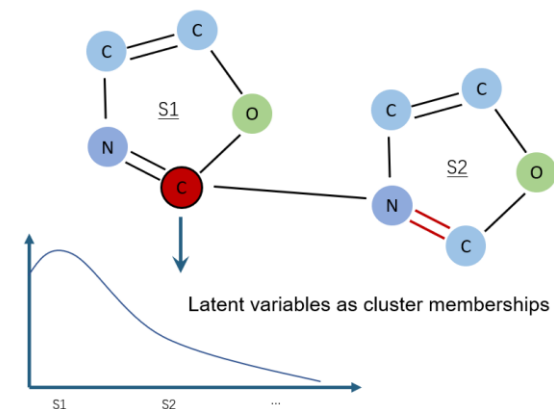
Google AI

WeBank
微众银行

Graph Clustering



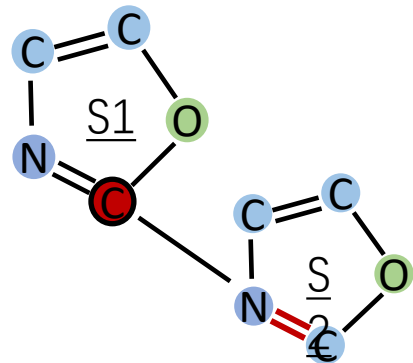
Graph Generation



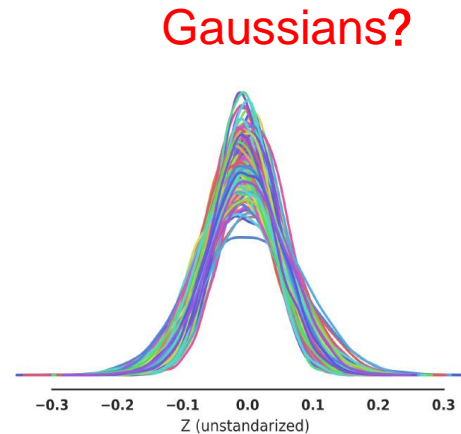
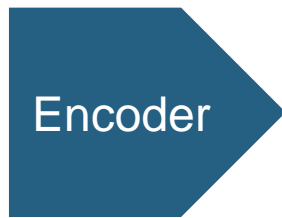
Variational Graph Autoencoder (Kipf et al, 2016)

Graph Generation: Generate new graph structure which resembles the input topology without trivial solutions.

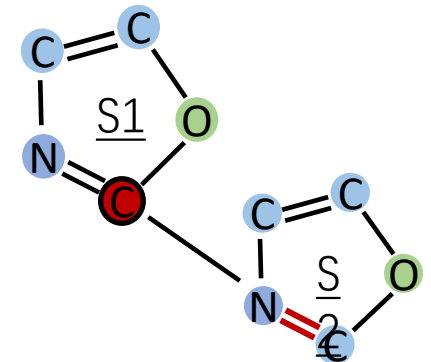
Drug design.



Molecular
input



Latent
factors



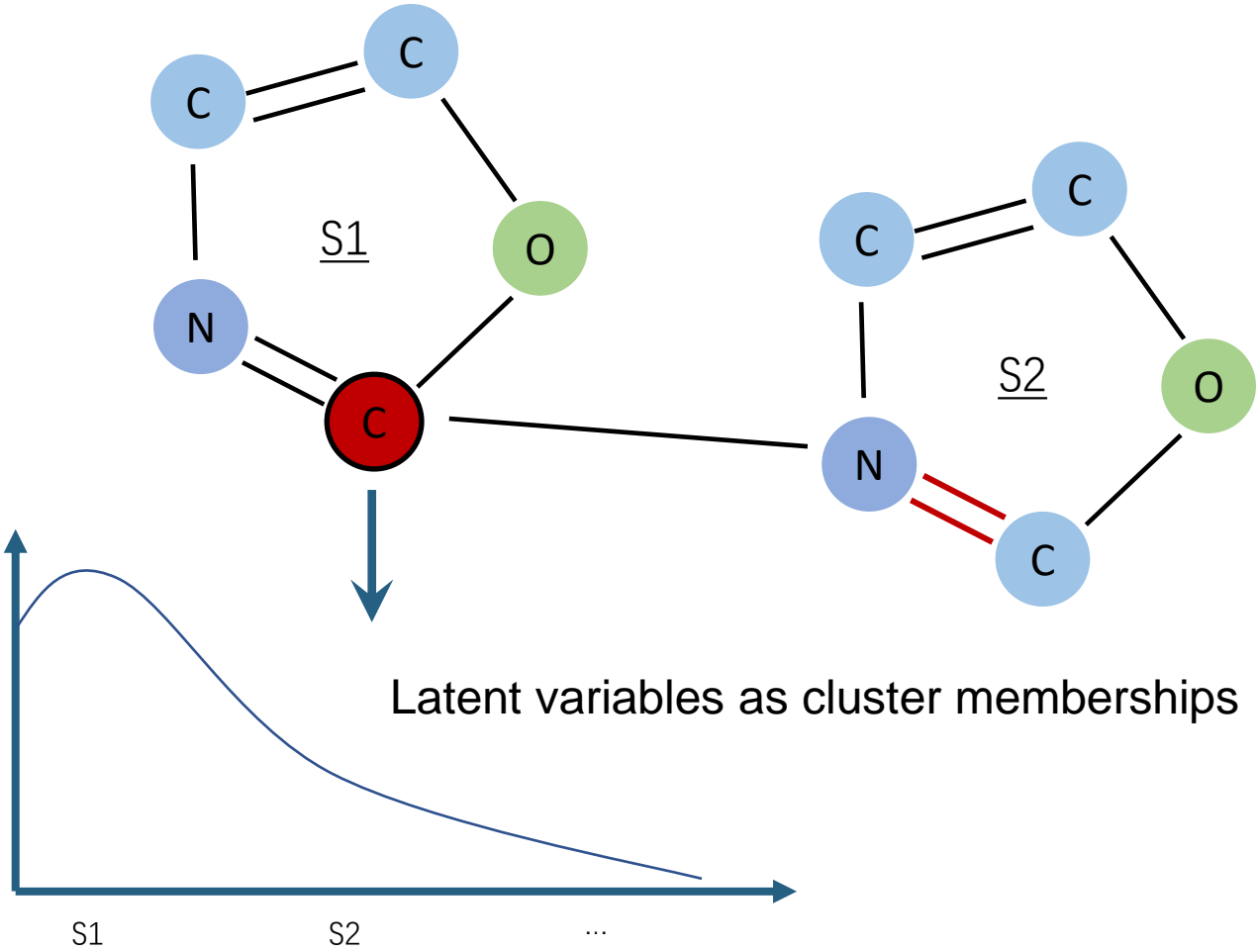
Molecular
output

Dirichlet Graph Variational Autoencoder (Li, Jia, et al. NeurIPS'20)

Motivation

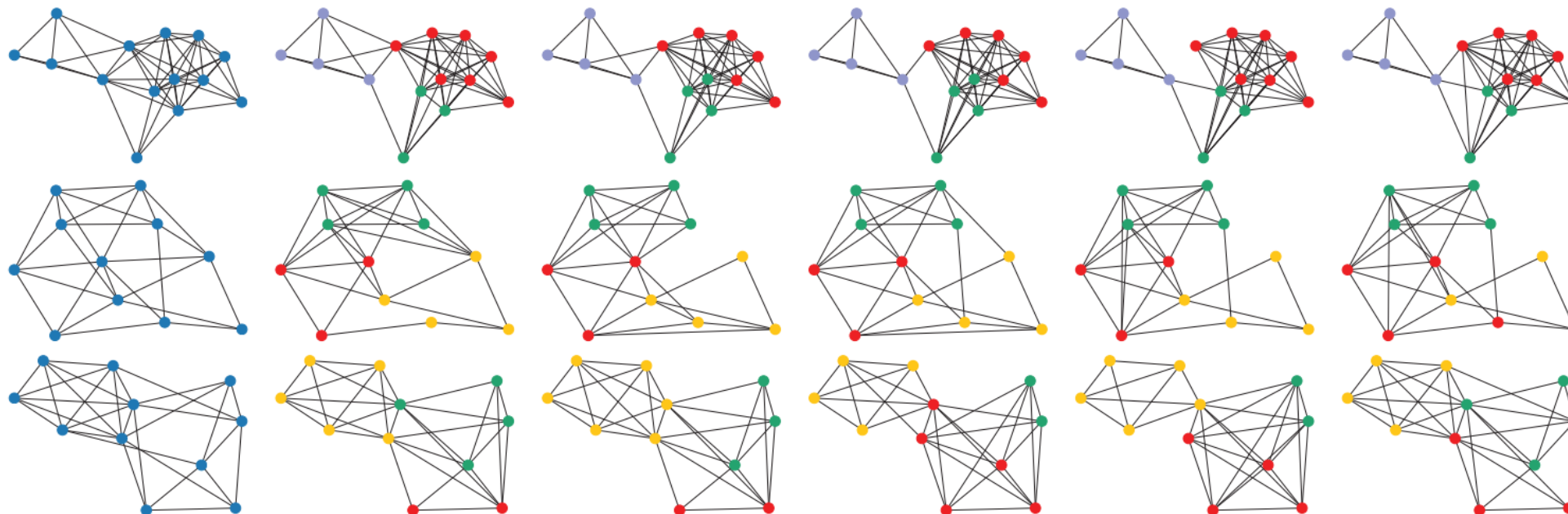
- #No clear explanation of the latent variable
- #The Gaussian distribution assumption may not be optimal
- #Success of latent Dirichlet allocation in text generation

Idea: Graph Cluster Memberships



Balanced Cluster Size

Left one in blue: the input graphs. Right five in colors: graph samples generated by DGVAE, where colors indicate latent cluster memberships with $K=3$



Welcome collaboration!

jialee@ust.hk

<https://sites.google.com/view/lijia>