

# A Unified Framework for Graph Embedding

Your names

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# Outline

1 Introduction

2 Approach

3 Experimental Results

4 Conclusion

5 References

## 1 Introduction

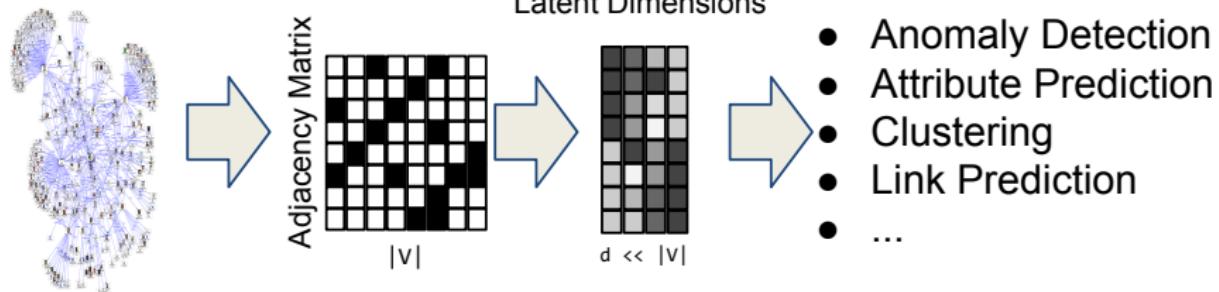
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# Graph Embedding



$$\Theta : V \mapsto \mathbb{R}^d$$

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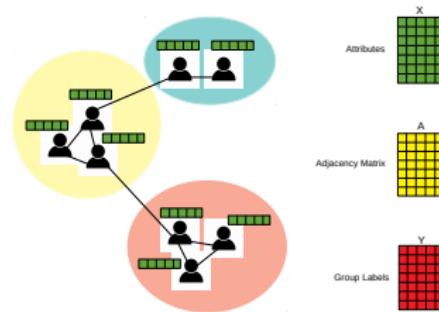
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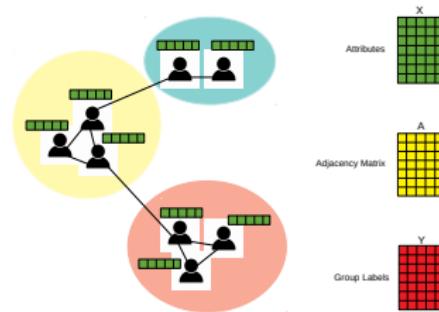
# node2vec

use textblock to locate images  
you can use pause



# node2vec

use textblock to locate images  
you can use pause



# WalkLets

# HARP

# struc2vec

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# Datasets

Table: Statistics of datasets.

Dataset	Nodes	Edges	Attributes	Labels
Cora	2,708	5,429	1,433	7
Citeseer	3,312	4,660	3,703	6

- Cora [1] and Citeseer [1]:
  - The labels indicate publications topics.
  - Attributes are binary representations of words in the corresponding publications.

# Link Prediction

explain about Link Prediction

use textblock to adjust images or tables in the frame

example for textblock:  $k$

# Node Classification

explain about node classification and compare the baselines  
use textblock to adjust images or tables in the frame

example for textblock:  $k$

# Node Classification

**Table:** Node classification performance (Macro-F1 score) of different methods on different datasets.

Dataset	Method	Macro-F1								
		10%	20%	30%	40%	50%	60%	70%	80%	90%
Cora	baseline	<b>0.828</b>	<b>0.841</b>	<b>0.854</b>	<b>0.869</b>	<b>0.883</b>	<b>0.901</b>	<b>0.909</b>	<b>0.916</b>	<b>0.921</b>
	baseline	0.663	0.673	0.684	0.691	0.726	0.754	0.769	0.788	0.808
	baseline	0.733	0.752	0.768	0.773	0.788	0.794	0.806	0.814	0.822
	baseline	0.778	0.795	0.812	0.822	0.837	0.854	0.861	0.869	0.877
	baseline	0.695	0.713	0.729	0.732	0.746	0.767	0.788	0.792	0.806
Citeseer	baseline	<b>0.731</b>	<b>0.739</b>	<b>0.755</b>	<b>0.778</b>	<b>0.786</b>	<b>0.790</b>	<b>0.796</b>	<b>0.804</b>	<b>0.812</b>
	baseline	0.538	0.588	0.607	0.610	0.616	0.621	0.635	0.656	0.677
	baseline	0.577	0.606	0.613	0.619	0.628	0.632	0.638	0.641	0.642
	baseline	0.604	0.633	0.671	0.678	0.696	0.705	0.723	0.735	0.745
	baseline	0.556	0.571	0.614	0.650	0.656	0.662	0.670	0.666	0.682

# Cora Visualization

use textblock to adjust images in the frame

example for textblock: *k*

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# Conclusion

- Graph embedding is useful for ...
- We learned ...

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# References

-  Prithviraj Sen, Galileo Namata, Mustafa Bilgic, Lise Getoor, Brian Gal- ligher, and Tina Eliassi-Rad, "Collective classification in network data", AI magazine, 29(3), 93-93, (2008).
-  Jure Leskovec and Julian J Mcauley, "Learning to discover social circles in ego networks", in Advances in neural information processing systems, pp. 539-547, (2012).
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Thanks for your attention!