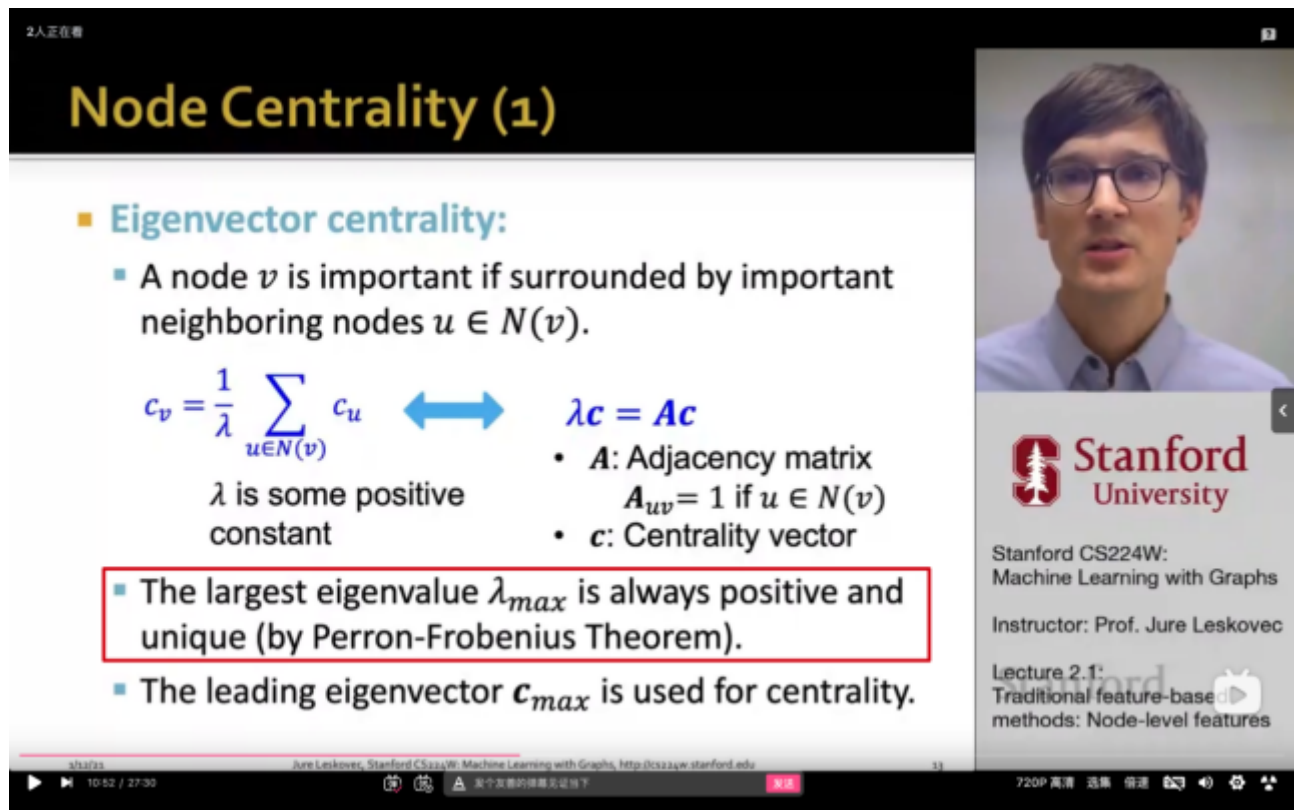


CS224W问题汇总

1. Eigenvector centrality (节点特征)



2人正在看

Node Centrality (1)

- **Eigenvector centrality:**
 - A node v is important if surrounded by important neighboring nodes $u \in N(v)$.

$$c_v = \frac{1}{\lambda} \sum_{u \in N(v)} c_u \quad \longleftrightarrow \quad \lambda \mathbf{c} = \mathbf{A} \mathbf{c}$$

λ is some positive constant

- \mathbf{A} : Adjacency matrix
 $A_{uv} = 1$ if $u \in N(v)$
- \mathbf{c} : Centrality vector

- The largest eigenvalue λ_{max} is always positive and unique (by Perron-Frobenius Theorem).

- The leading eigenvector \mathbf{c}_{max} is used for centrality.

Stanford University

Stanford CS224W: Machine Learning with Graphs

Instructor: Prof. Jure Leskovec

Lecture 2.1: Traditional feature-based methods: Node-level features

5/13/23 Jure Leskovec, Stanford CS224W: Machine Learning with Graphs, <http://cs224w.stanford.edu>

10:52 / 27:30 720P 高清 选集 倍速

这里说 λ 是某个正数，不太理解红框中的内容，不太明白 λ 的作用是啥 \mathbf{c}_{max} 是什么意思？

2. Graphlet Kernel (图特征)

[视频网址链接](#)

Graphlet Kernel


- Given two graphs, G and G' , graphlet kernel is computed as

$$K(G, G') = \mathbf{f}_G^T \mathbf{f}_{G'}$$
- Problem:** if G and G' have different sizes, that will greatly skew the value.
- Solution:** normalize each feature vector

$$\mathbf{h}_G = \frac{\mathbf{f}_G}{\text{Sum}(\mathbf{f}_G)}$$

$$K(G, G') = \mathbf{h}_G^T \mathbf{h}_{G'}$$

问题在于图形G1和G2可能具有不同的大小,
 The problem is that graphs G1 and G2 may have different sizes.



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Lecture 2.3:
Traditional feature-based
graph-level features

问题：为什么这里 \mathbf{h}_g 要用 \mathbf{f}_g 除以 $\text{Sum}(\mathbf{f}_g)$ 来进行normalize (可以举个例子吗)

3.