

**First Iteration**

Init each node with Rank  $R_0 = \frac{1}{4}$

$$R_t(i) = \frac{0.15}{4} + 0.85 \sum_{j \in \text{pred}(i)} \frac{R_{t-1}(j)}{k_{\text{out}}(j)}$$

Node 1:

$$R_1(1) = 0.375 + 0.85\left(\frac{1/4}{2} + \frac{1/4}{2}\right) = \frac{1}{4}$$

Node 2 (I'm not going to type all of that L<sup>A</sup>T<sub>E</sub>X):

$$R_1(2) = 0.4625$$

Node 3:

$$R_1(3) = 0.14375$$

Node 4:

$$R_1(4) = 0.14375$$

**Second Iteration**

Node 1:

$$R_2(1) = 0.2952$$

Node 2:

$$R_2(2) = 0.3722$$

Node 3:

$$R_2(3) = 0.2341$$

Node 4:

$$R_2(4) = 0.0986$$

**Third Iteration**

Node 1:

$$R_3(1) = 0.2376$$

Node 2:

$$R_3(2) = 0.4298$$

Node 3:

$$R_3(3) = 0.1957$$

Node 4:

$$R_3(4) = 0.1370$$

**AFTER USING NETWORKX AND IGRAPH** The approximation at  $t = 3$  is somewhat close, but not enough for 4 nodes.