

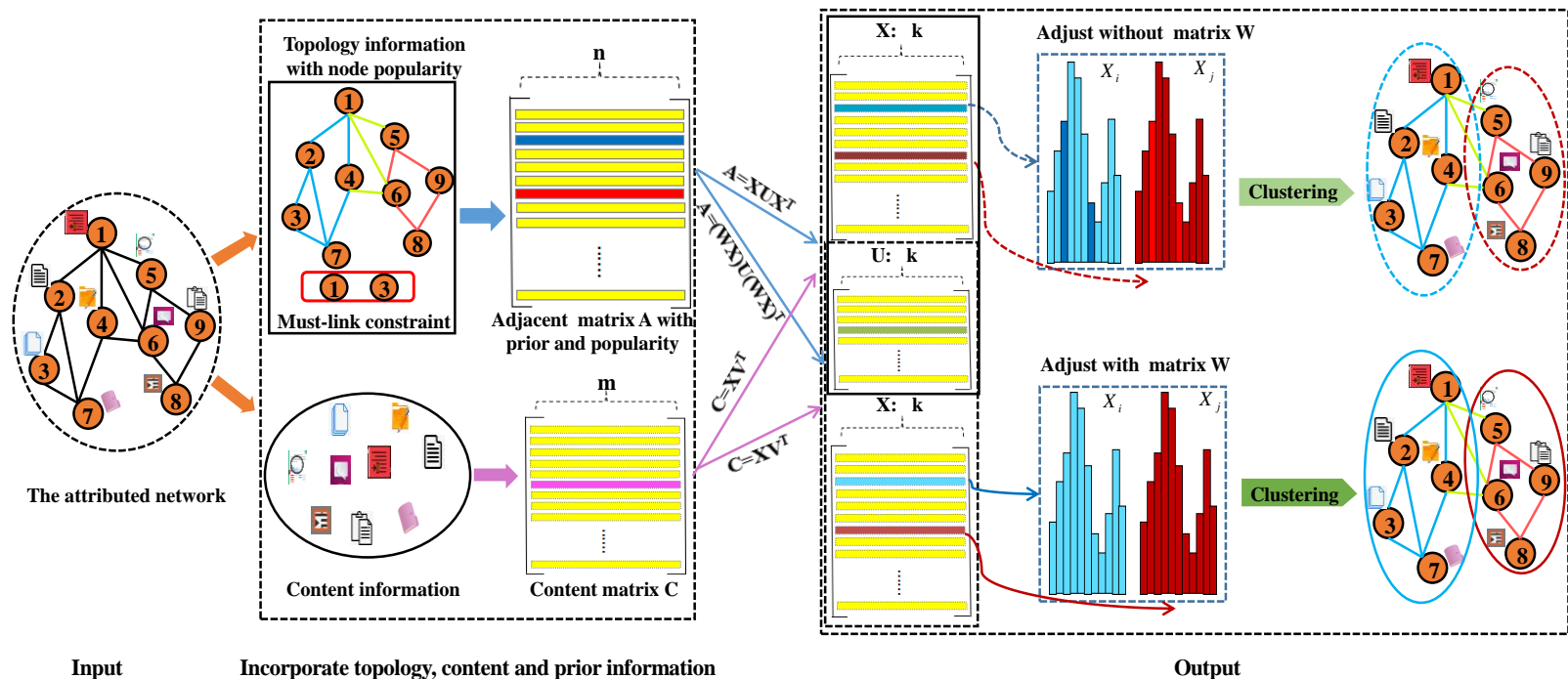
Semi-supervised community detection
on attributed networks using non-negative
matrix tri-factorization with node popularity

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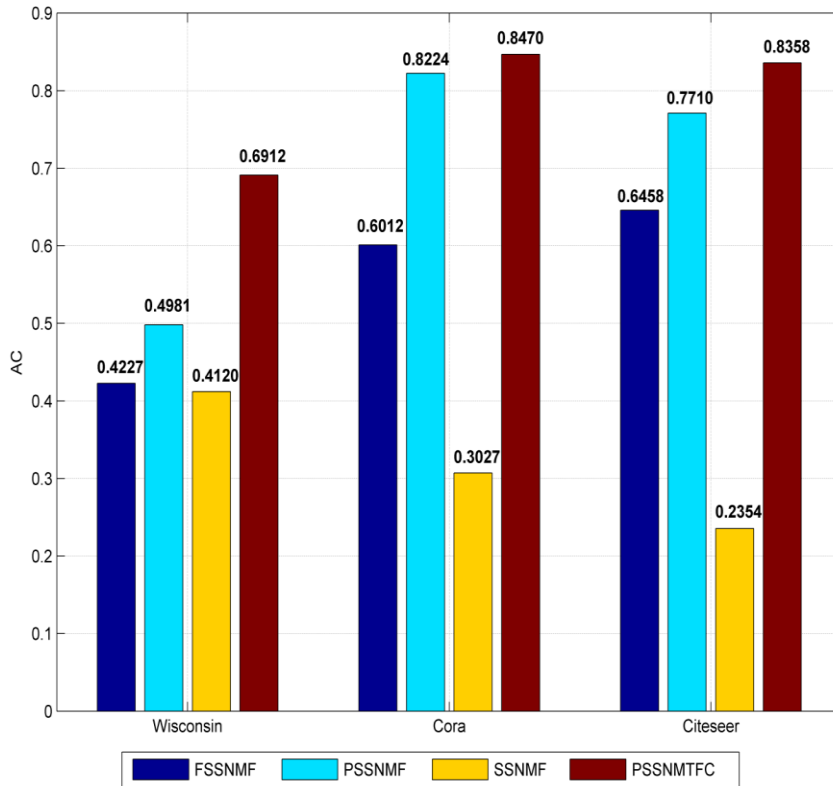
Problems & Ideas

- **Problems of community detection methods on attributed networks**
 - Interactions among communities are most not considered
 - Node heterogeneity is not considered
 - Priors are always not used
- **Ideas: a semi-supervised community detection method for attributed networks**
PSSNMTCF considers the three factors simultaneously



Main Contributions

- Comparisons of PSSNMTFC with similar methods on real attributed networks with 5% priors



- Results of PSSNMTFC on larger attributed networks with prior information ranging from 2% to 10%

Networks	Cora			Citeseer		
Methods Prior	PSSNMTFC	PSSNMF	FSSNMF	PSSNMTFC	PSSNMF	FSSNMF
2%	0.8906	0.5361	0.6631	0.8611	0.8315	0.3033
4%	0.9399	0.8066	0.6699	0.9265	0.9177	0.3359
6%	0.9401	0.9362	0.7615	0.9411	0.9224	0.3382
8%	0.9670	0.9430	0.7661	0.9524	0.9300	0.3679
10%	0.9527	0.9362	0.7745	0.9588	0.9568	0.4020
Networks	DBLP			Pubmed		
2%	0.8378	0.8383	0.8879	0.7753	0.7331	0.6653
4%	0.8617	0.8930	0.8889	0.7916	0.7336	0.7034
6%	0.8882	0.9028	0.8890	0.8882	0.8836	0.8567
8%	0.9347	0.9053	0.8902	0.9254	0.8836	0.8974
10%	0.9651	0.9264	0.8941	0.9321	0.9041	0.9241