

Differentially Private Correlation Clustering

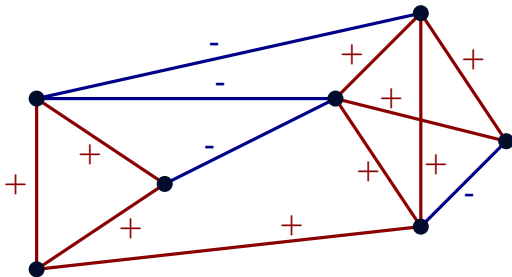
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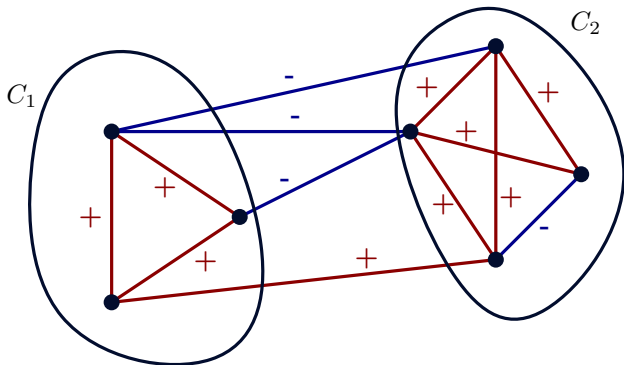
Correlation Clustering

Clustering based on similarities (Bansal et al. '02):



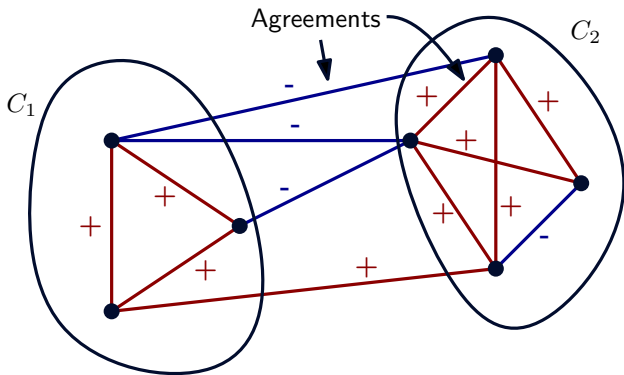
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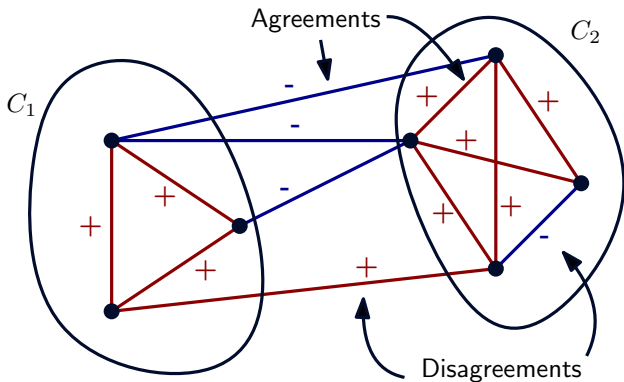
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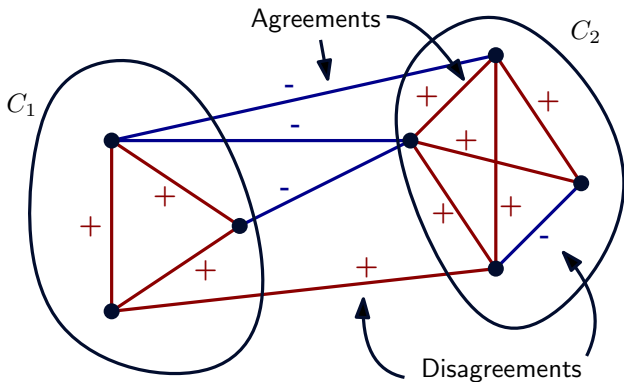
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Two related objectives:

- (A) minimize the number of disagreements (MinDis)
- (B) maximize the number of agreements (MaxAgr)

Standard model of privacy in Theoretical CS

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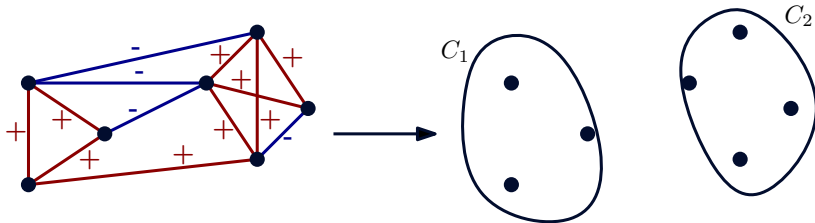
Differential Privacy

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Correlation Clustering with Edge-level privacy

- good clustering based on private similarity information
- which does not reveal the sign of any individual edge



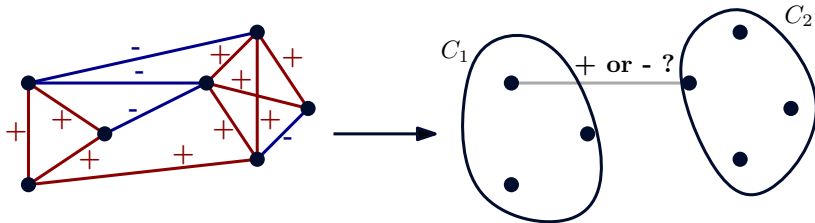
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- ϵ -DP mechanism for MinDis unweighted complete graphs

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- similar results for general graphs and MaxAgr objective

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- based on mechanisms for synthetic graph release:
 - Gupta, Roth, Ullman '12; Eliáš, Kapralov, Kulkarni, Lee '20

Thank you for your attention!