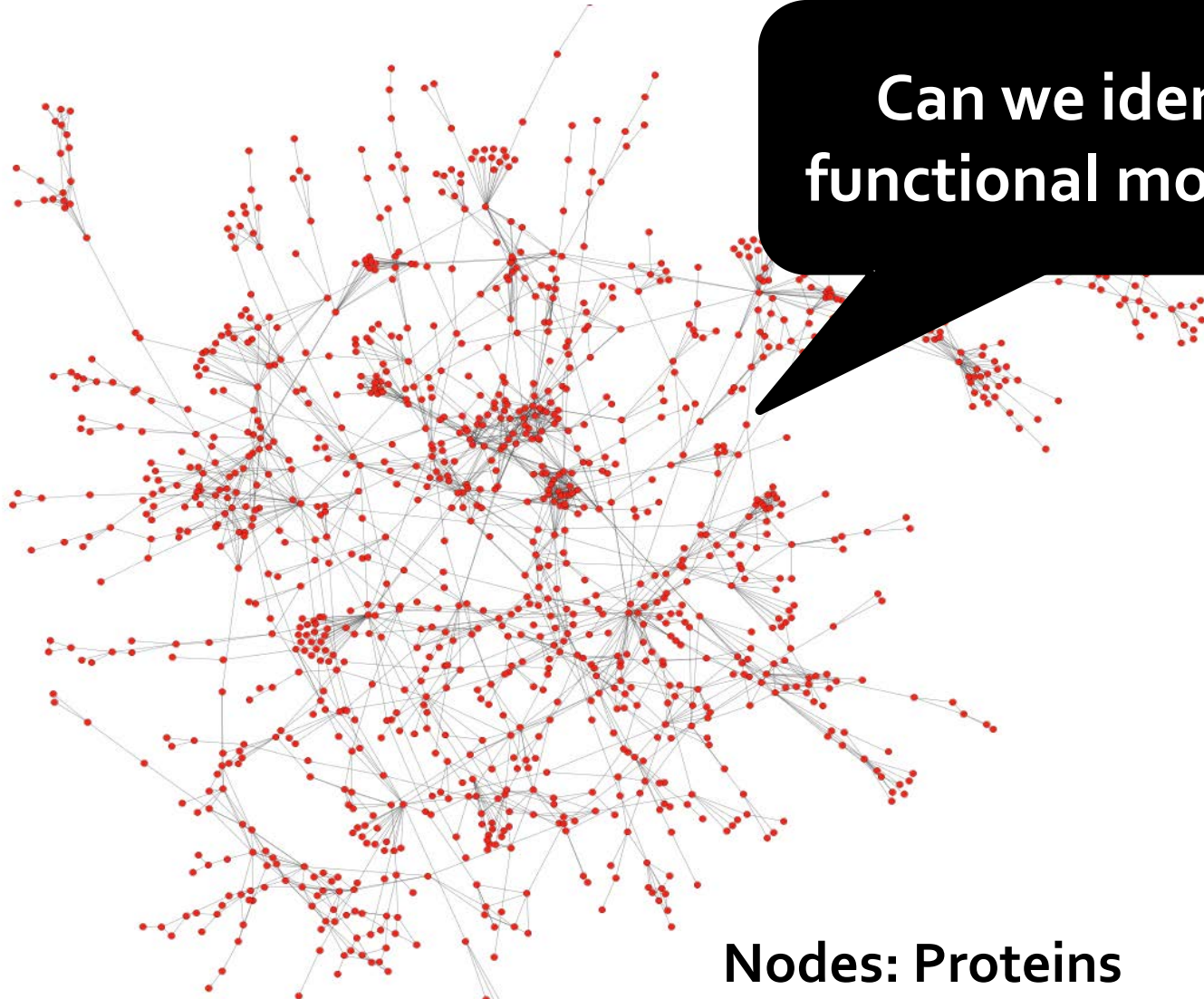


Community Detection in Graphs

Mining of Massive Datasets
Leskovec, Rajaraman, and Ullman
Stanford University



Protein-Protein Interactions

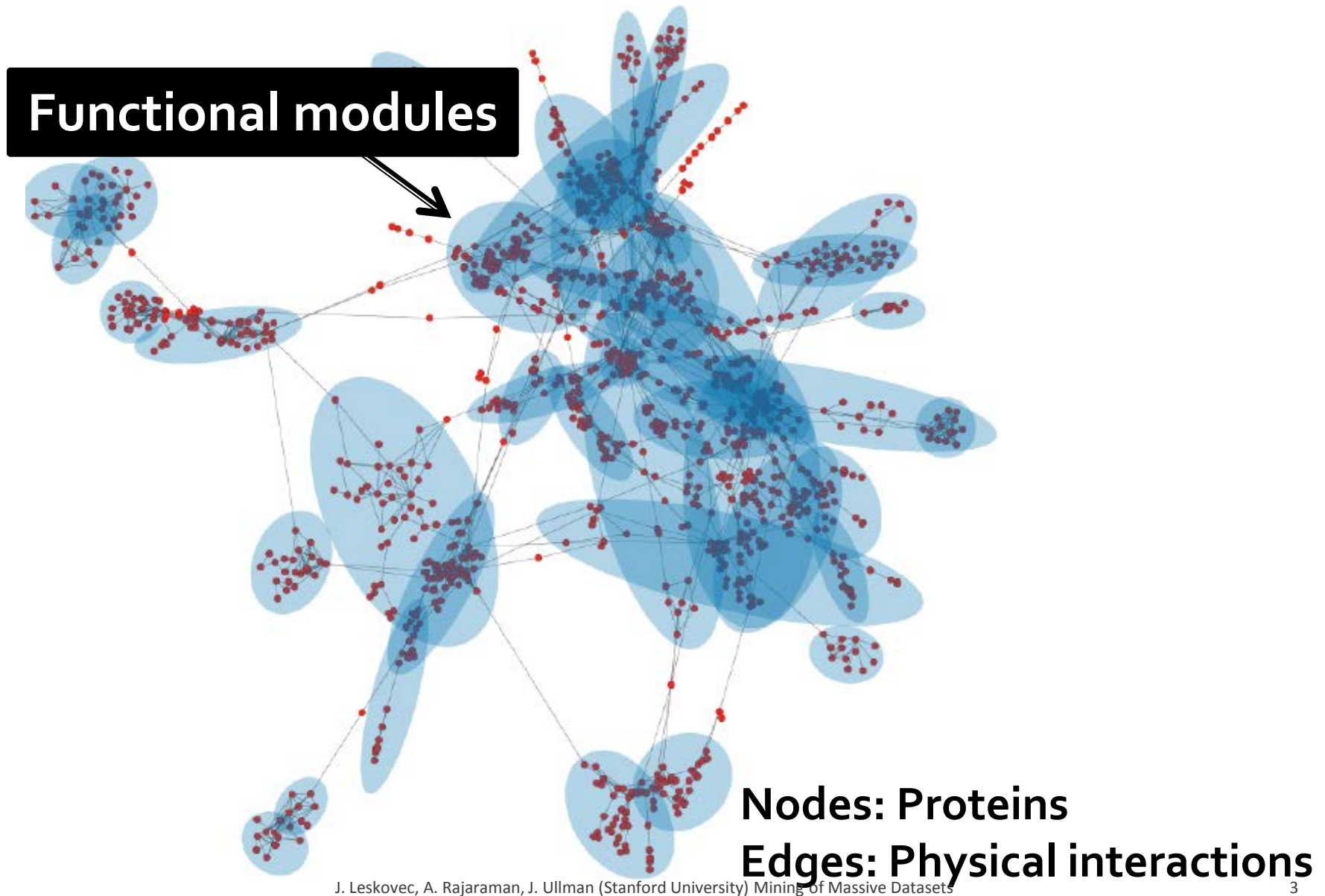


Can we identify
functional modules?

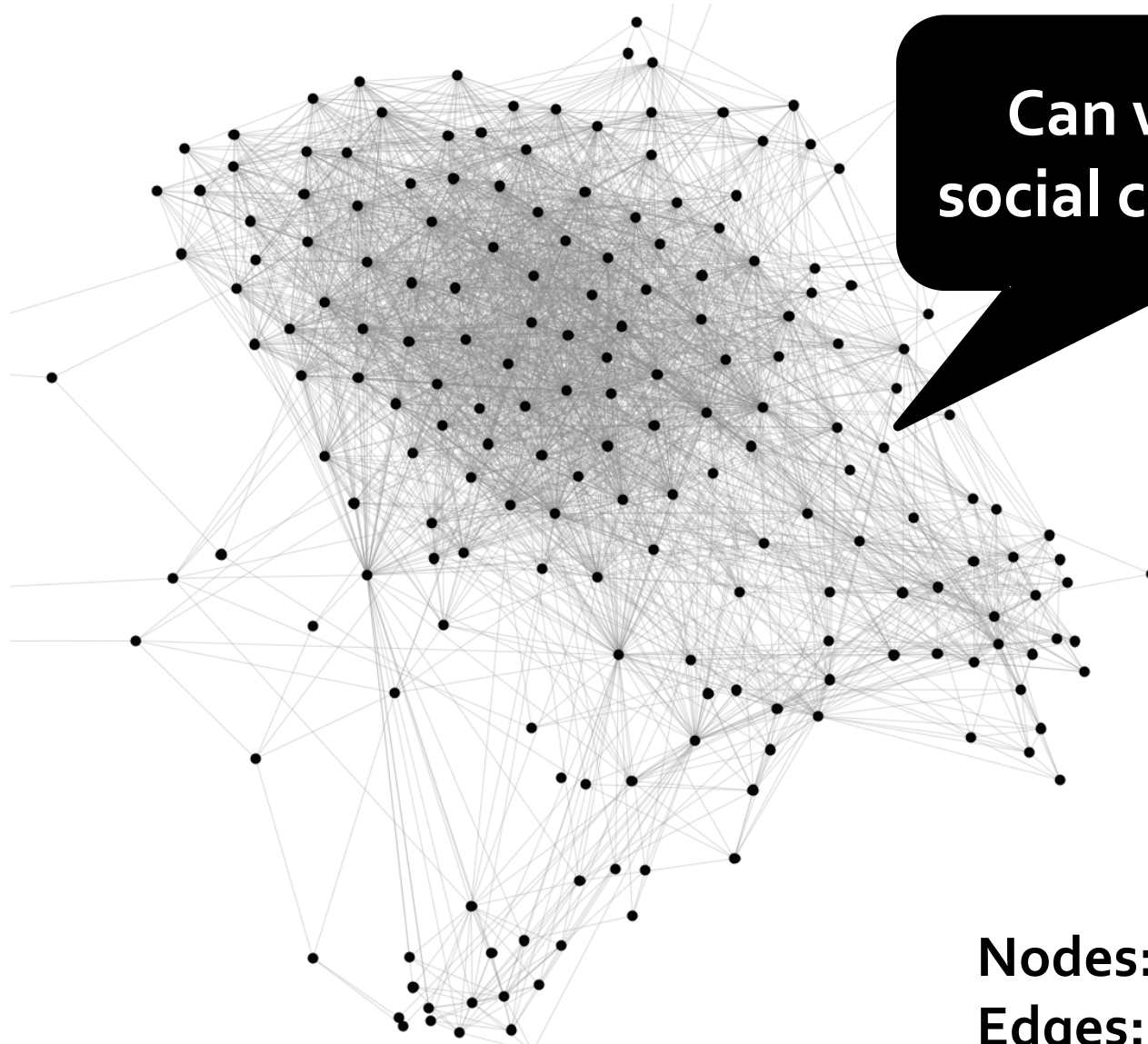
Nodes: Proteins

Edges: Physical interactions

Protein-Protein Interactions



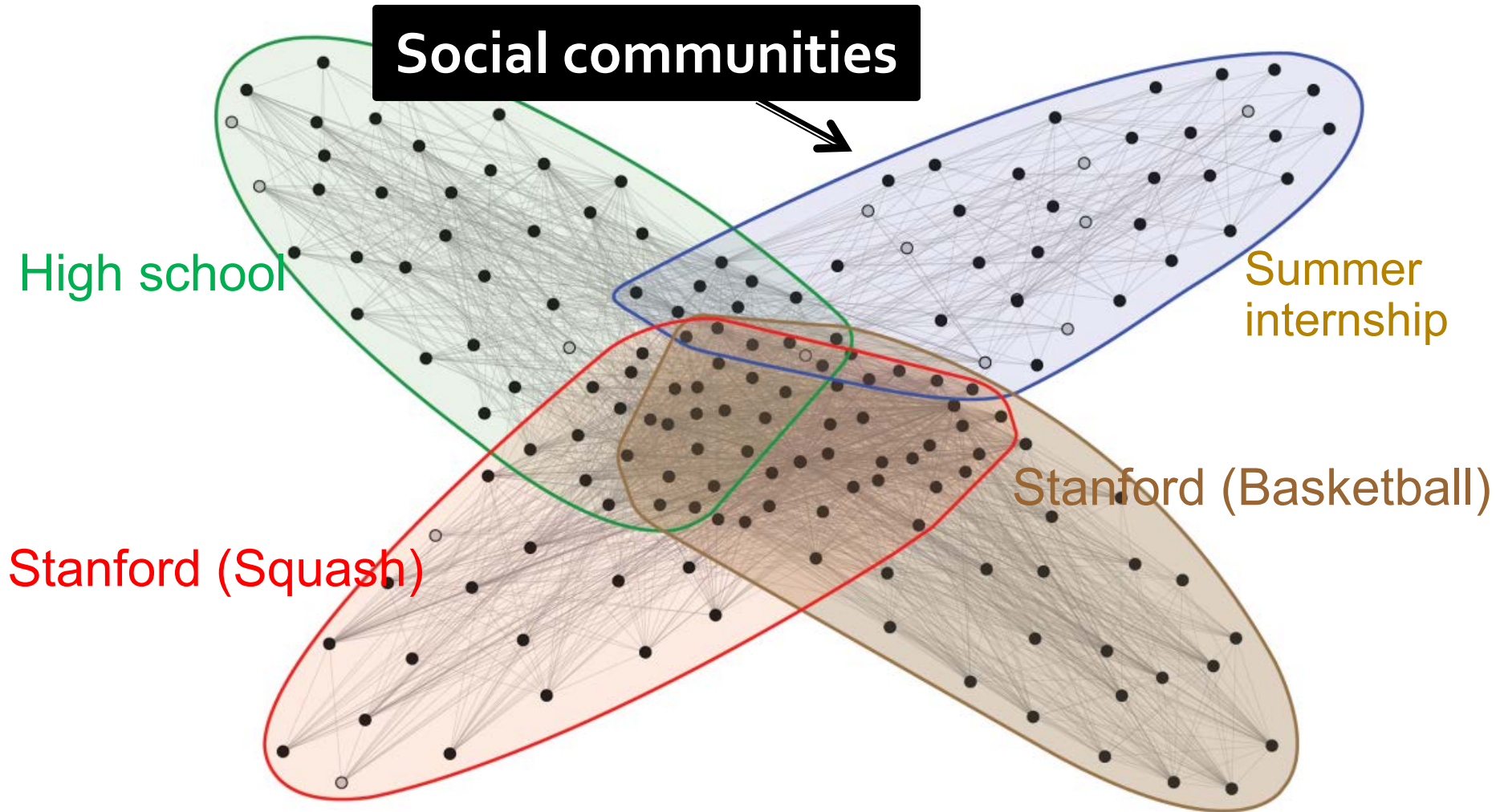
Facebook Network



Can we identify
social communities?

Nodes: Facebook Users
Edges: Friendships

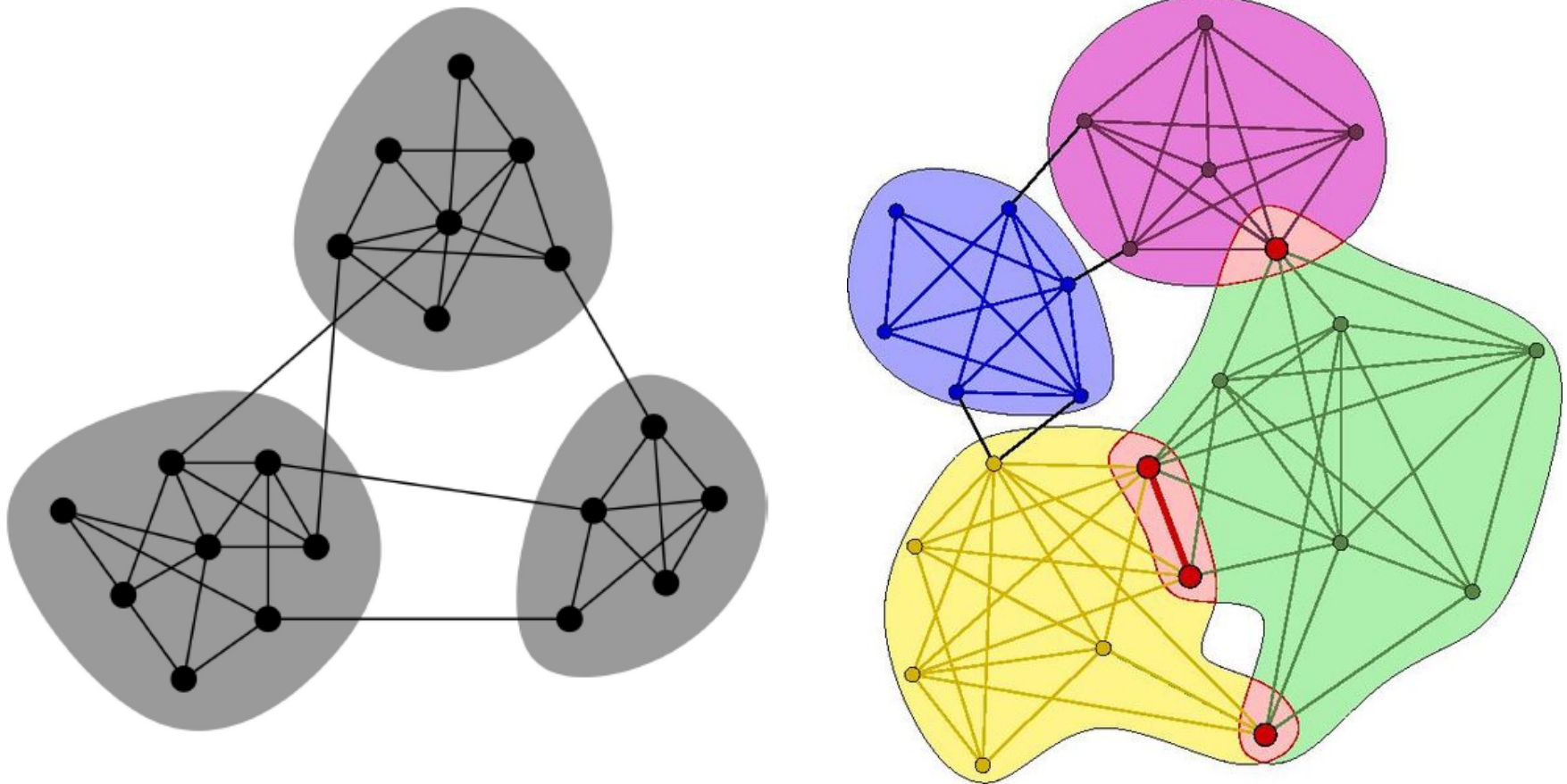
Facebook Network



Nodes: Facebook Users
Edges: Friendships

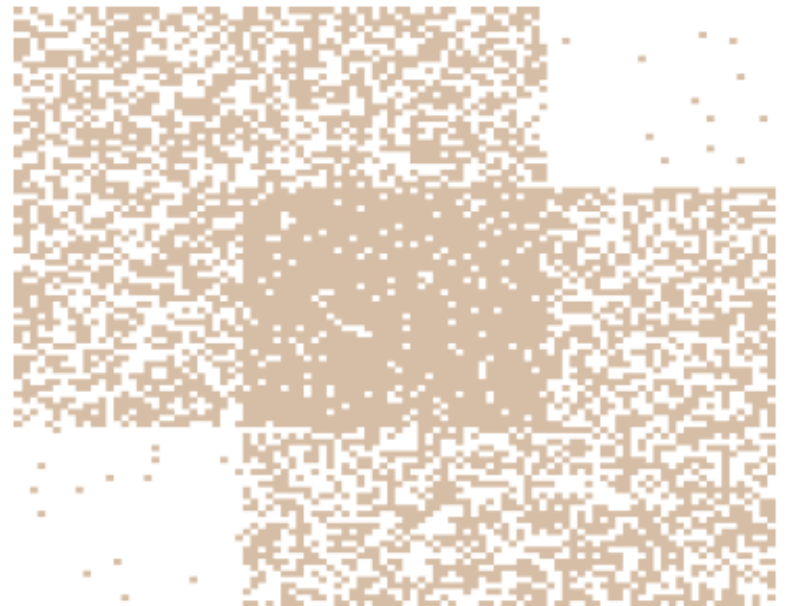
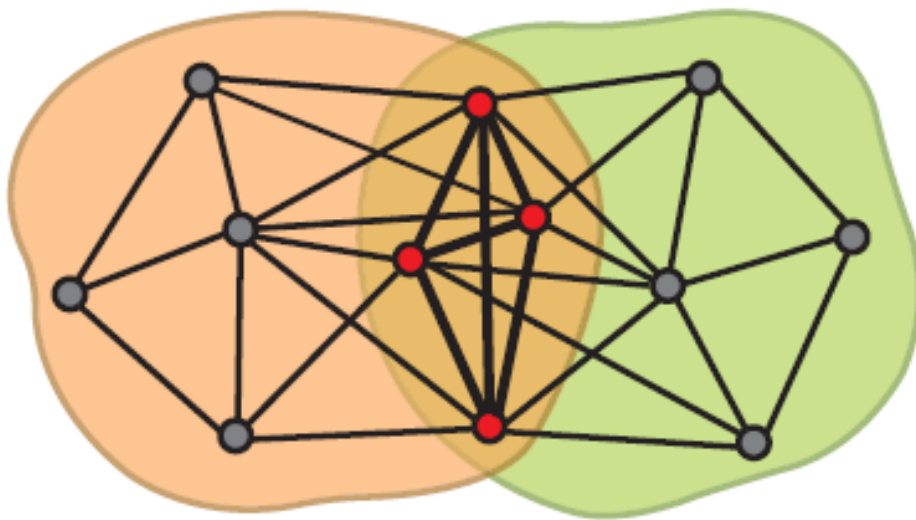
Overlapping Communities

- Non-overlapping vs. overlapping communities



Communities as Tiles!

- What is the structure of community overlaps:
Edge density in the overlaps is higher!

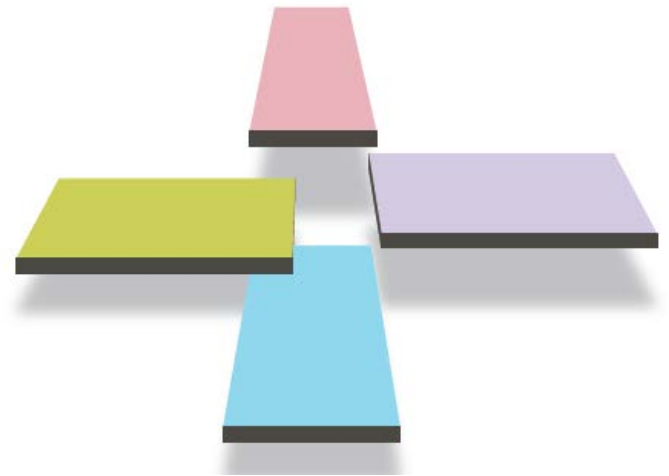


Communities as “tiles”

Recap so far...



Communities
in a network



This is what we want!