

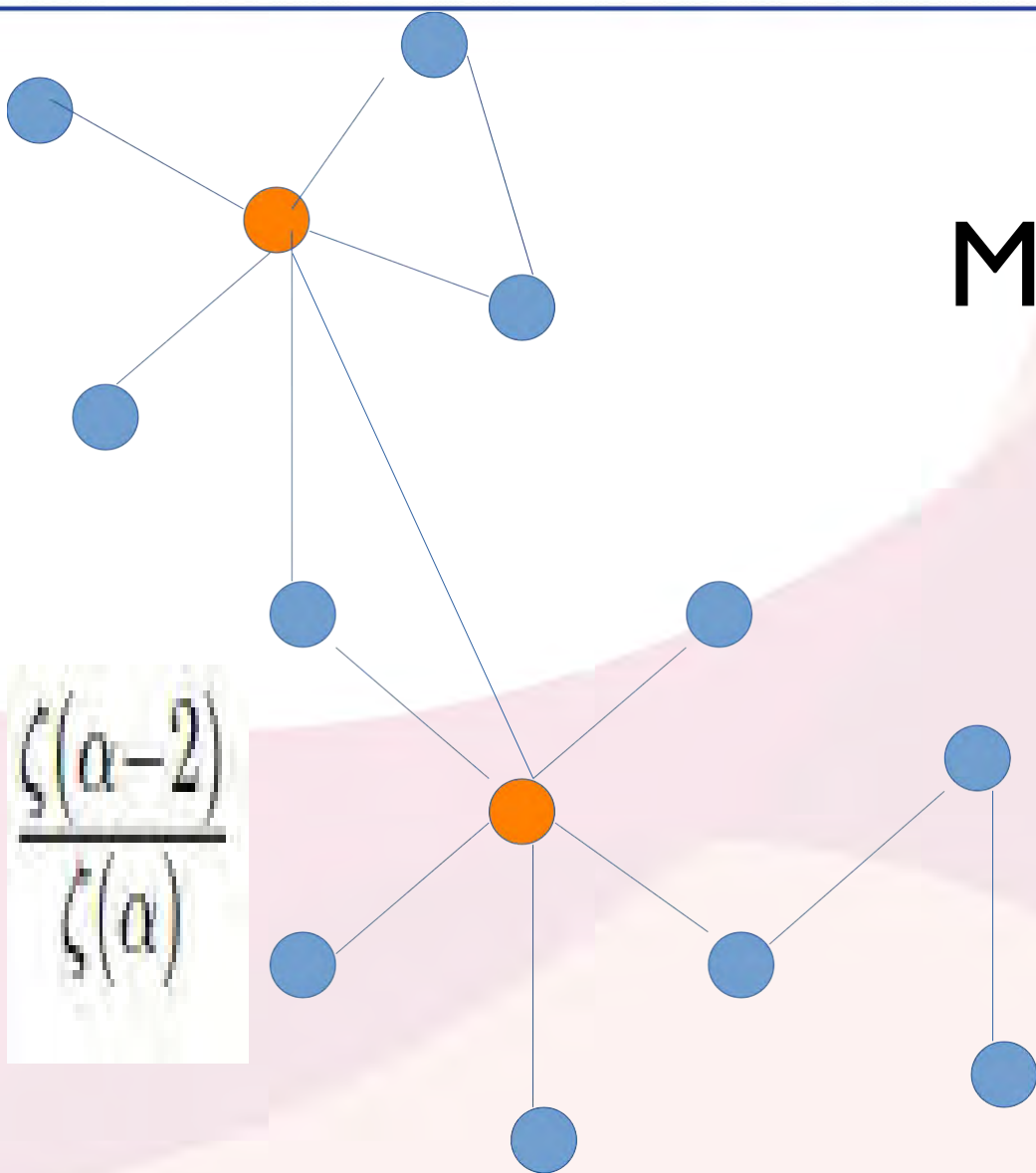
# CIFellows 2020-2021

Computing Innovation Fellows

Matthew Drescher

UC Davis

Not real world  
but nice  
algorithmically!



$$\frac{\zeta(\alpha-2)}{\zeta(\alpha)}$$

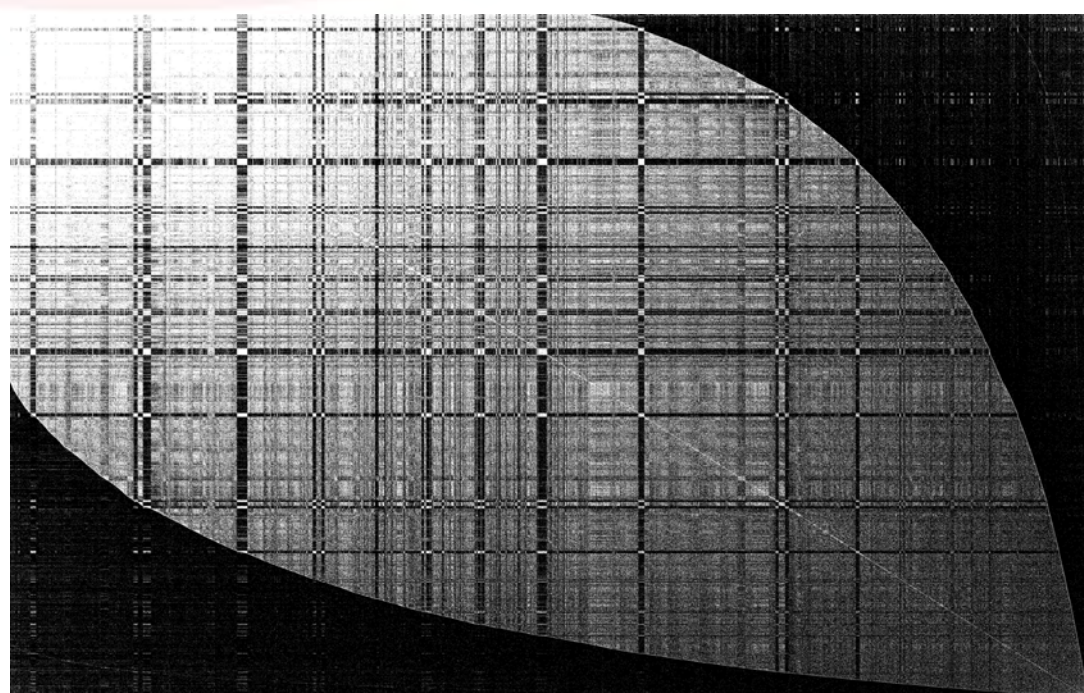
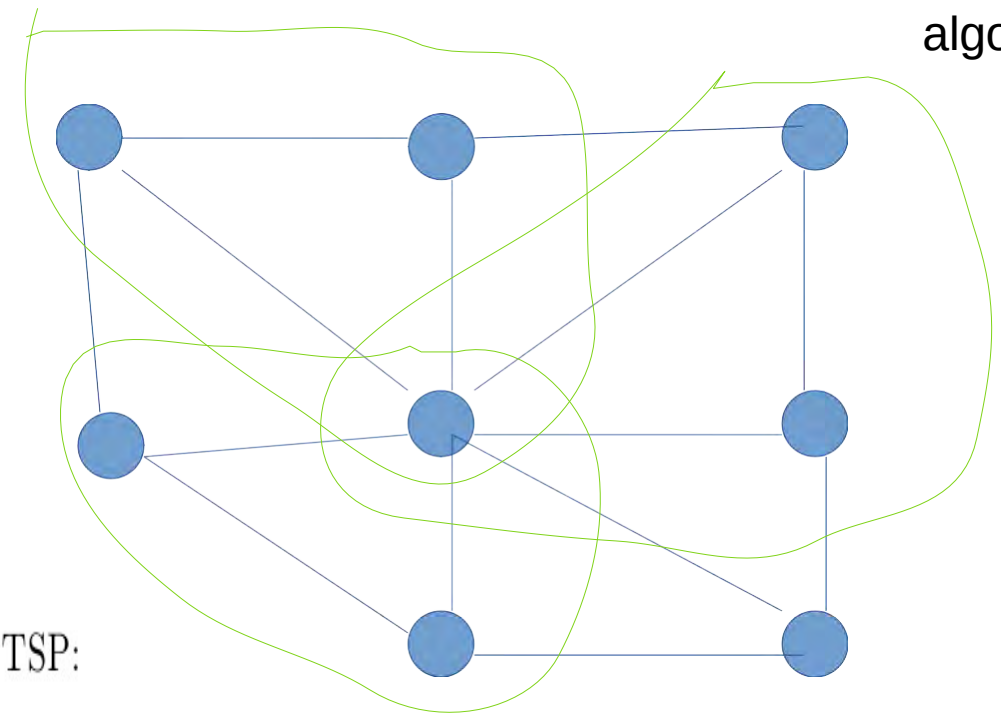
Real World more like Scale Free. **Degree variance can be infinite!** Irregularity makes it challenge to map efficiently.

Map Adjacency Matrix to Hardware

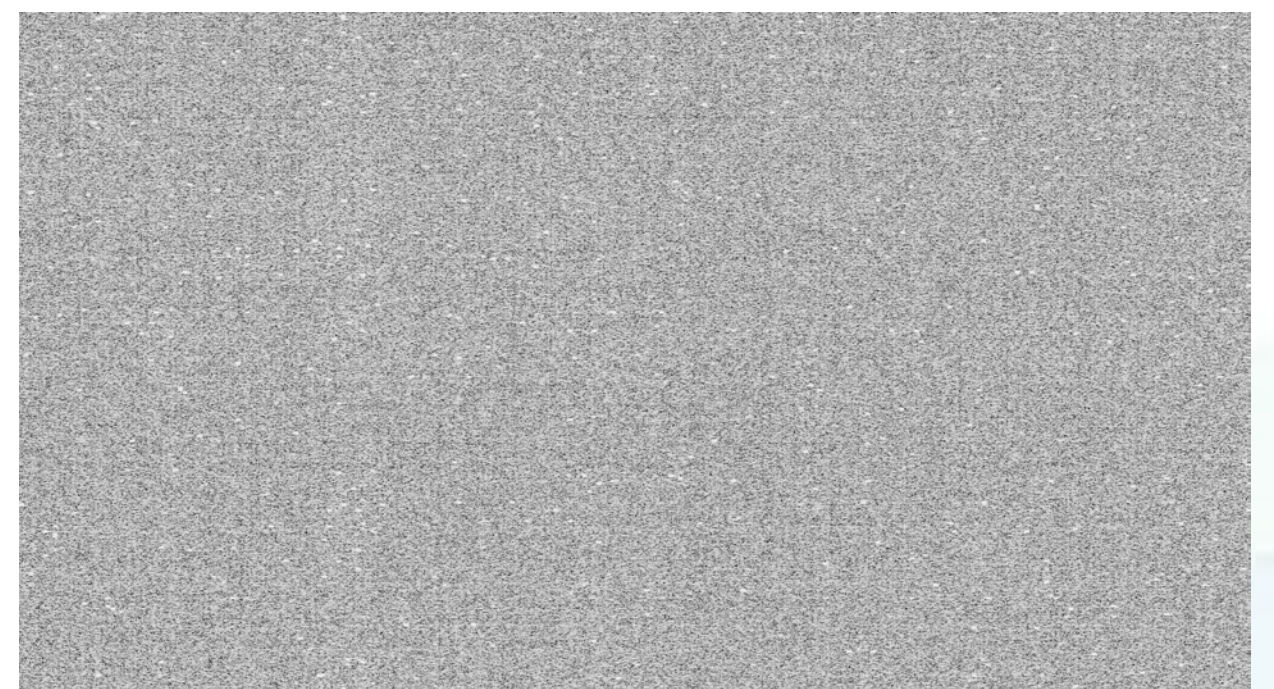
the graph reordering problem as an instance of TSP:

$$\begin{aligned} \text{GSCORE} \quad & \max \sum_{ij \in [n]^2} s_{ij} x_{ij} \\ \text{s.t.} \quad & \sum_{j>i} x_{ij} + \sum_{i<j} x_{ji} = 2 \quad i, j \in [n] \\ & x_{ij} \in \{0, 1\} \quad i, j \in [n]. \end{aligned}$$

Algorithms and hardware love regularity and density.



reorder



Journal Citations

Speedups

