Implementing K-Trusses

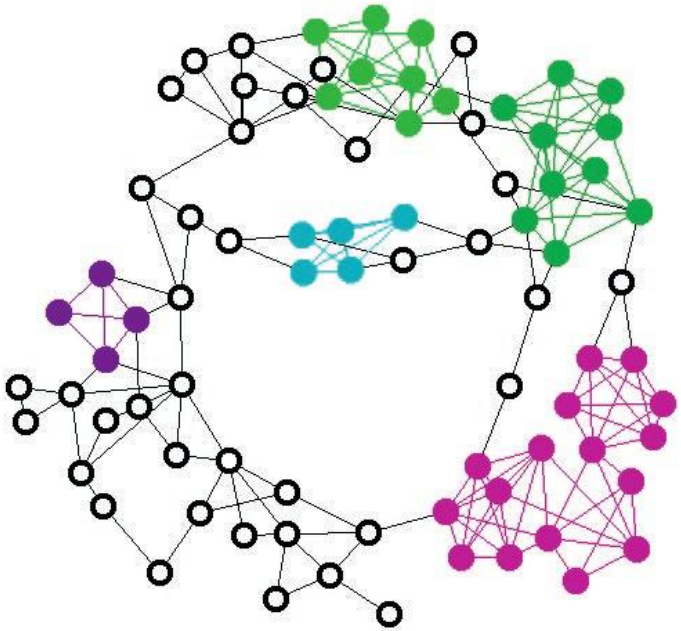
Tillmann Fiehn
Sebastian Arnold

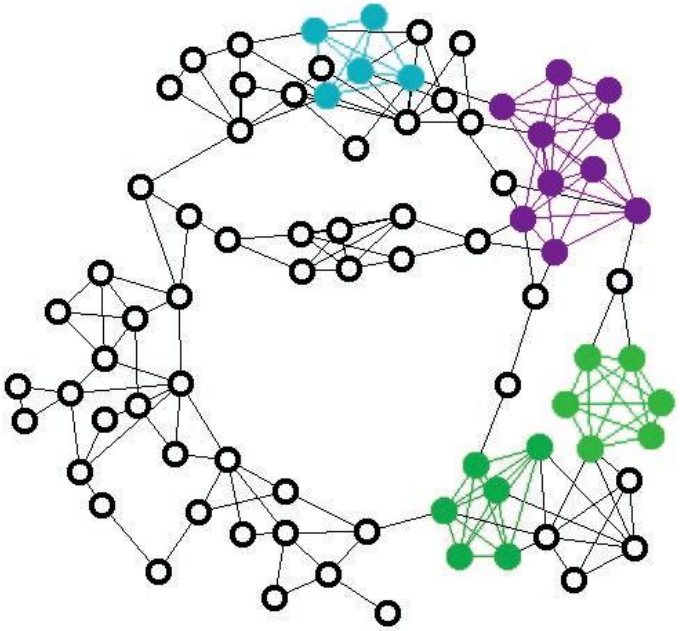
Fachgebiet Datenbanksysteme und Informationsmanagement
Technische Universität Berlin

http://www.dima.tu-berlin.de/

K-Trusses

- Relaxation of k-member clique
- Non-trivial, single-component maximal subgraph
- Every edge is contained
  - in at least k-2 triangles
  - in the subgraph





K-Trusses

- findKTrusses: Edges, k -> ZoneAssignments (v, z)
  - finds all k-trusses of the graph
  - each returned vertex v is part of a truss z

```
simplifyGraph
while true do:
 augmentGraphWithDegrees
 enumerateTriangles
 keep only edges contained in k-2 triangles
 if all edges kept break;
done
findComponents
```

K-Trusses in MapReduce