Mining Complex Networks

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Objectives

1. Part 1 - Exploratory Data Analysis (EDA)
   - Represent relational data as graphs with **python-igraph**
   - Slice the graph in various ways for analysis and viz
   - Local analysis - node neighbourhoods (degree, strength, ego-net)
   - Global analysis - degree distribution, connected components
2. Part 2 - Clustering
   - Beyond edges - node triads (triangles, transitivity)
   - Multi-node motifs: cliques
   - Look for dense subgraphs via node partitioning
3. Big Dig
   - Identify such datasets at BD12
   - Data Science Friends

Online material

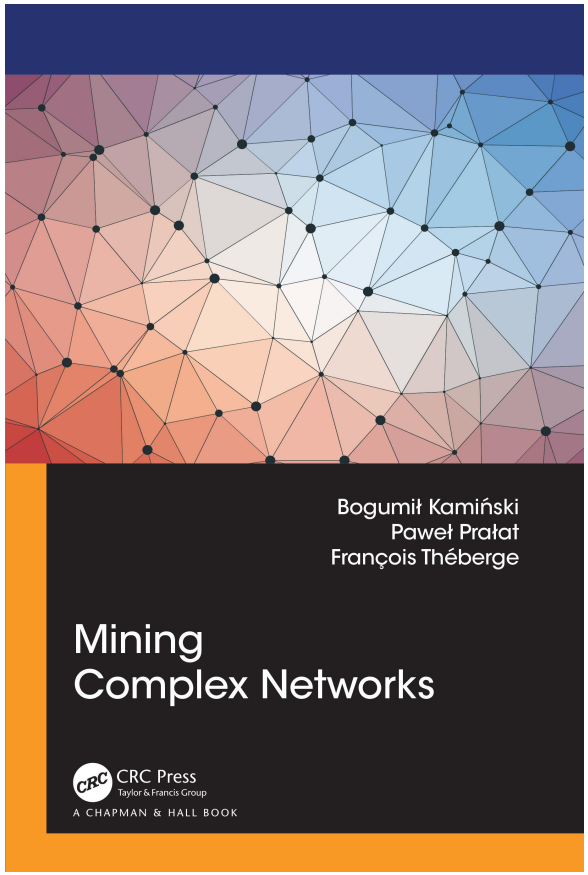
Notebooks and slides are available on GitHub:

`https://github.com/ftheberge/mining_graphs`

- Python code by/for non-expert(s)
- Tested on Linux and MacOS
- Instructions to build conda environment
- Links to more resources

Background material

Based on our textbook (CRC press):



Companion **notebooks**: github.com/ftheberge/GraphMiningNotebooks