Tutorial for New Users

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Introduction

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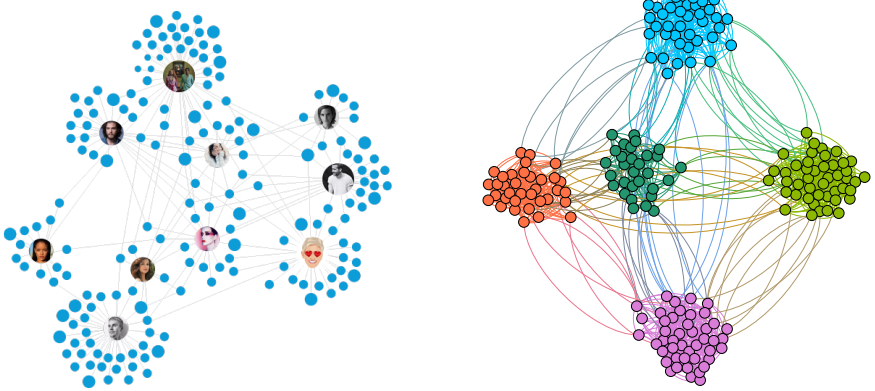
Introduction

Network analysis

Unveil non-trivial topological patterns

- Important / central / influential vertices
- Community structure
- . . .



[Source: talkwalker.com]

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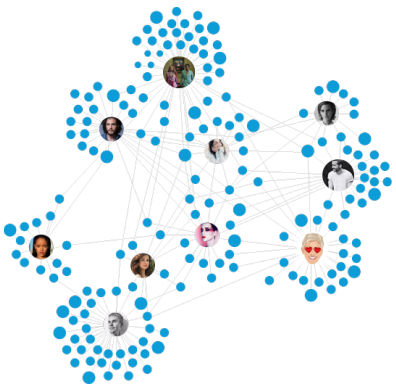

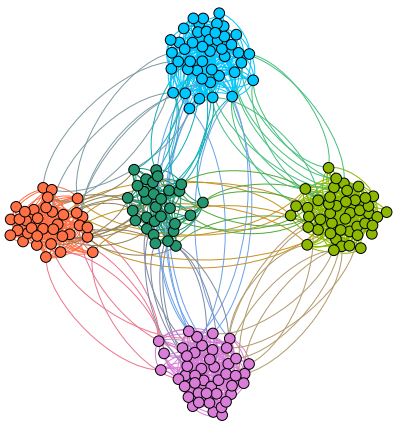

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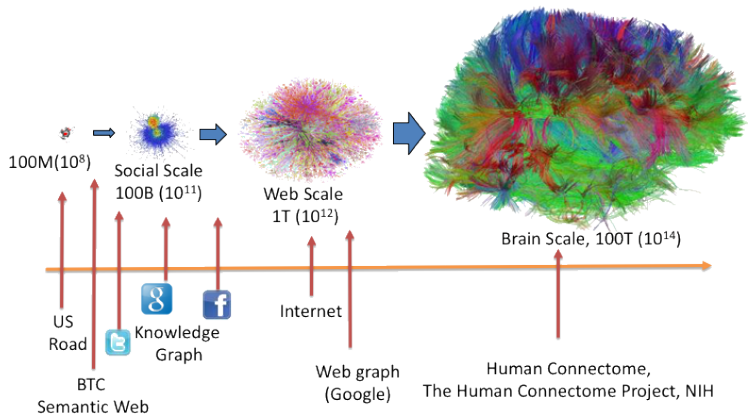
Challenges

- Efficient algorithms for the analysis of large networks
- Study the dynamics of those patterns in time-evolving networks



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NetworKit – Main Goals and Modules

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- Efficient C++ back end
- Parallelism (with OpenMP)

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  - scipy, matplotlib . . .

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Community Detection	**Centrality Measures**	**Graph Generators**
Distance Computations	**Link Prediction**	**Sparsification**
Dynamic Algorithms	**Basic Graph Toolbox**	**Algebraic Algorithms**

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conda

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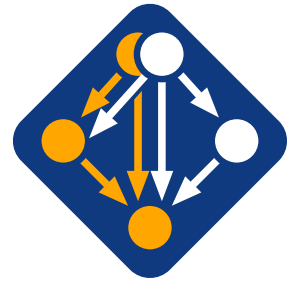

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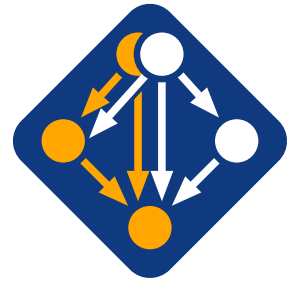

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More details about installation at `github.com/networkit/networkit`

Jupyter Notebook Demo

Simple use cases:

1. Read a graph
2. Visualize a graph with Gephi
3. Computation of central vertices
4. Graph generators
5. Community detection

Conclusions – Where to get help

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- Mailing list:

  `networkit@lists.hu-berlin.de`

Thank you