

# Introduction to Social Network Analysis with R

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# Outline

Tutorial Materials and Tools

Part I: A Brief Introduction to R Environment

Part II: Social Network Data Manipulation

Part III: Classical Network Analysis with R

# Online Access to the Tutorial Materials

## GitHub - Tutorial Materials

- ▶ <https://github.com/bulentozel/RSNA>

## Installing R and All

- ▶ <http://www.r-project.org/>

## An Integrated Development Environment Tool for R

- ▶ <http://www.rstudio.com/>

# Introduction to R

## Computing Environment

- ▶ Using external packages
- ▶ Introduction to R syntax
- ▶ Help tools

## Data Structures and Data Manipulation

- ▶ Vector, Matrix, List, Data Frame, Array
- ▶ Operators
- ▶ Basic visualization options

# Part II: Social Network Data Manipulation

## Data

- ▶ Using built-in datasets
- ▶ Importing external data

## Network Data Manipulation

- ▶ Creating a network from scratch manually
- ▶ Creating random networks
- ▶ Manipulation of network level, node level and link level attributes
- ▶ Basic network attributes

# Part III: Classical Network Analysis with R

## Network Level Analysis

- ▶ Connectivity
- ▶ Centralization
- ▶ Reciprocity
- ▶ Transitivity
- ▶ Components

## Node Level Analysis

- ▶ Degree Centrality
- ▶ Betweenness
- ▶ Closeness
- ▶ Designing custom measures