**Data science lifecycle**

Problem understanding

* Define the problem and goal
* Ask questions
* Formulate research questions
* Define appropriate approaches to tackle the research

Data retrieval and understanding

* Web scraping
* Determine data sources
* Describe data
* Check data types
* Data relevance
* Graphical plots

Data preparation

* Combine data sources
* Dealing with missing values
* Dealing with outliers
* Aggregation
* Data enrichment/ extraction

Exploratory Data Analysis

* Create plots and figures
* Scatter plots (correlations)
* Heat maps
* Data distributions
* Histograms

Modeling

* Define dynamic modeling tasks
* Shico word2vec modeling
* Semi-supervised and dynamic topic modeling
* Temporal network modeling
  + time-respecting paths

Model evaluation

* Evaluate the models
* Compare different metrics
* What is the best model?
* Is it good enough?

Deployment

* Deploy a shiny application to a server or cloud platform
* Make research available