# LDA2Net: Digging under the surface of COVID-19 topics in literature

Topic 23 companion sheet

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This file contains the following supplementary information for Topic 23 of the manuscript "*LDA2Net*: Digging under the surface of COVID-19 topics in scientific literature":

- Human label and automatic n-gram label proposals (Table 1)
- Summary measures (Table 2)
- Network of top 25 bigrams (Figure 1)
- Wordclouds of top 25 words by node relevance measure (Figure 2)
- Wordclouds of top 25 bigrams by edge relevance measure (Figure 3)
- Filtered (0.99 percentile) topic network (Figure 4)

Table 1: Human and automatic label proposals. Automatic label candidate for largest word community of the topic. In parenthesis: absolute frequency of the walk out of a sample of size 1000.

| Human label | 2-gram label | 3-gram label | 4-gram label |
|---|---|---|---|
| virus Cov-19 infection | virus->human (9%) | virus->human->viruses (3.9%) | SARS->MERS->virus->human (0.8%) |

Here follows the set of topic-specific measures that have been used to classify the topic and to analyse its structural properties (see manuscript for details):

Table 2: Summary measures

| | JSD | Mean propensity | Variance propensity | Modularity | Barrat Clustering Coeff. |
|---|---|---|---|---|---|
| value | 0.649542 | 0.008965 | 0.000444 | 0.000000 | 0.554677 |
| rank | 56 | 90 | 84 | 35 | 33 |

Based on the aforementioned measures, Topic 23 has been classified as a SPECIALIZED topic.

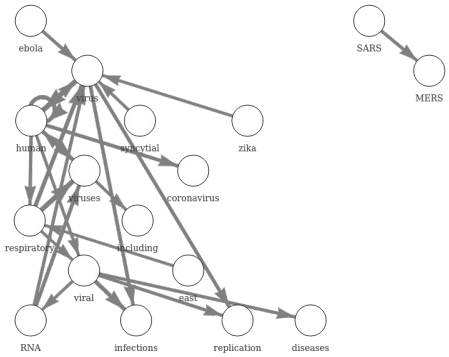


Figure 1: Network of top 25 bigrams (i.e., edges) by weight.

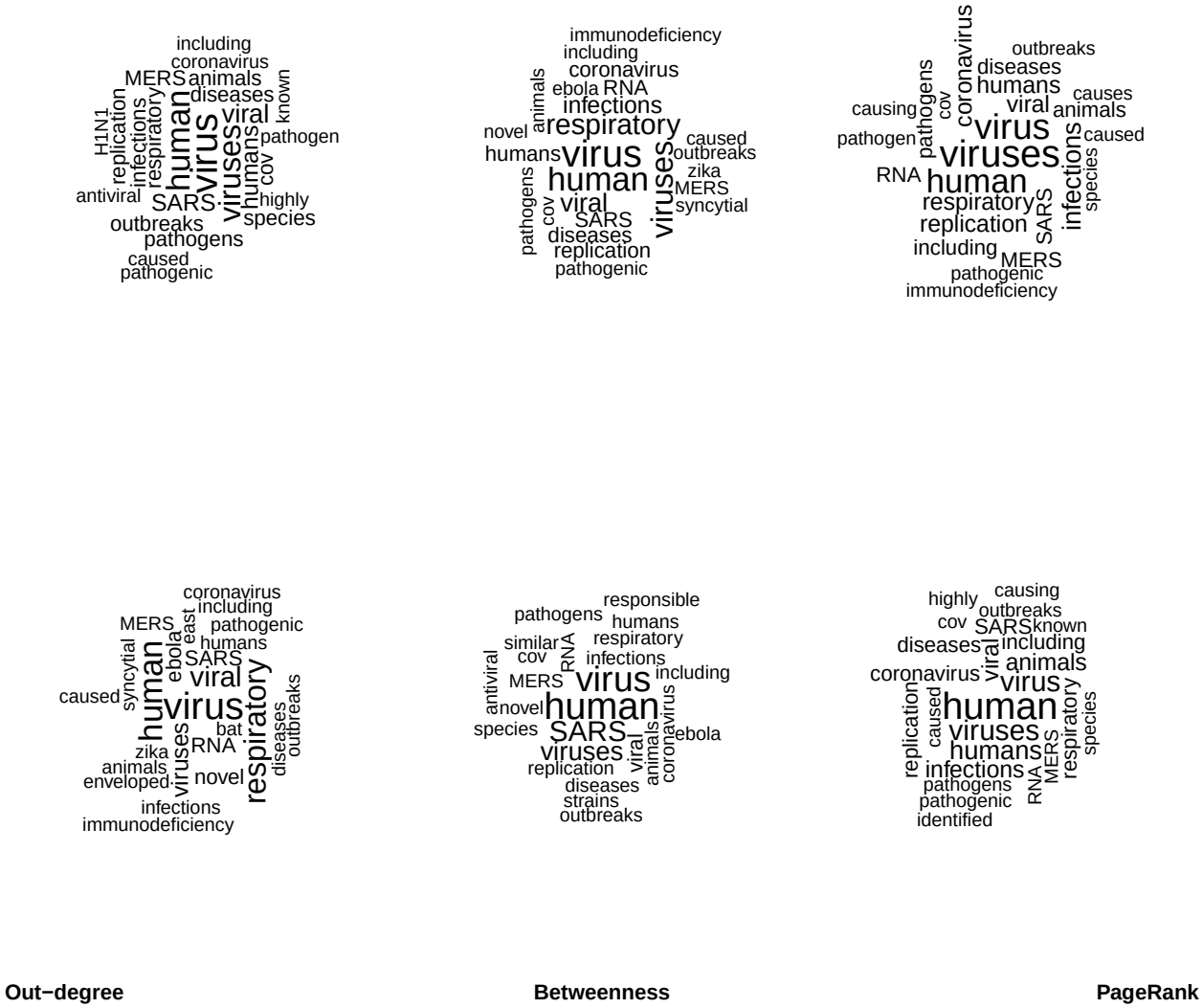


Figure 2: Top 25 unigrams (i.e., nodes) by measure.

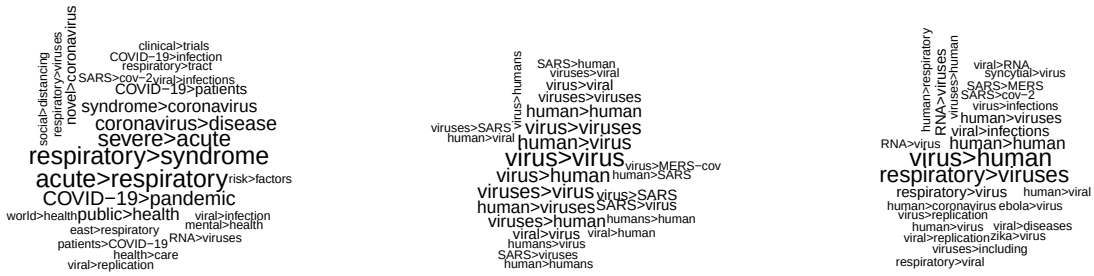


Figure 3: Top 25 bigrams (i.e., edges) by measure.

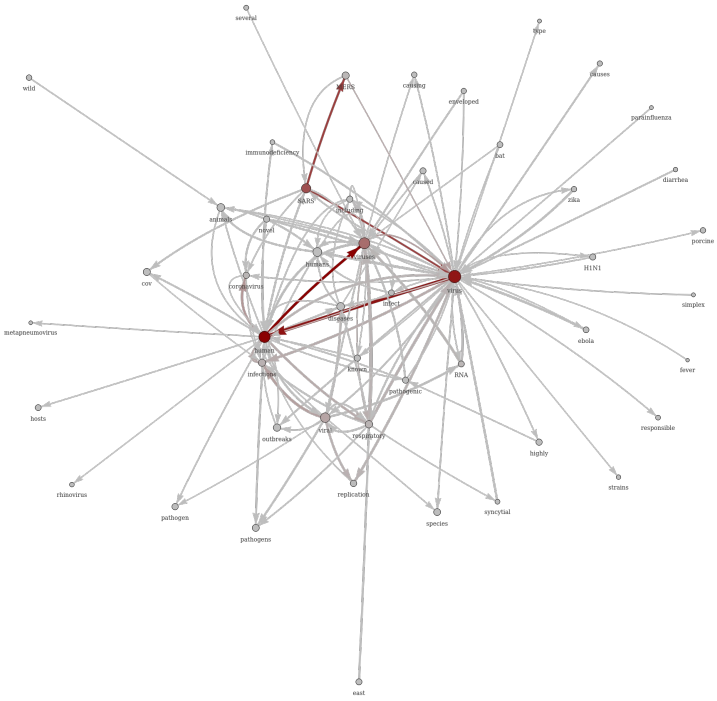


Figure 4: Filtered topic network (by weight). Layout based on Fruchterman-Reingold algorithm. Node size is proportional to topic-specific word probability provided by LDA. Edge width is proportional to topic-specific bigram weight provided by LDA2Net method. Node and edge color represent their betweenness centrality. Isolated nodes have been removed after filtration.