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

Topic 90 companion sheet

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This file contains the following supplementary information for Topic 90 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
neurological and cognitive impairment	brain->including (10%)	neurologic->manifestations->including (3.2%)	neurologic->manifestations->including->brain (3%)

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	0.519525	0.007590	0.000417	0.208440	0.502163
rank	6	25	79	107	5

Based on the aforementioned measures, Topic 90 has been classified as a SPECIALIZED topic.

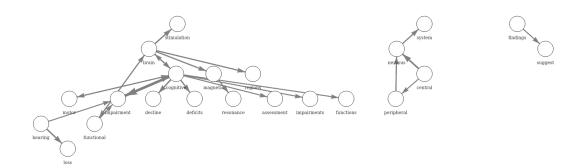


Figure 1: Network of top 25 bigrams (i.e., edges) by weight.

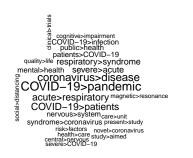


impaired sensory impaired sensory peripheral functional entry peripheral functional entry peripheral functional entry entry

peripheral central studies loss effects changes system including page AD dementia Cognitive. Stimulation of functional magnetic memory suggest resonance

Out-degree Betweenness PageRank

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



delirium-brain frunctional-cognitive function-cognitive brain-functional-brain brain-brain brain-central functional-brain brain-brai

impairment-cognitive cognitive-seasesament cognitive-seasesament motor-function brain-cognitive findings-suggest nervous-system motor-cognitive hearing-loss cognitive-function cognitive-impairment control of the control of the control of the cognitive hearing-loss cognitive-impairment cognitive-impairment of the cognitive-impairment cognitive-impairment of the cognitive-impairment cognitive-impairment of the cognitive-impairment cognitive-impairm

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

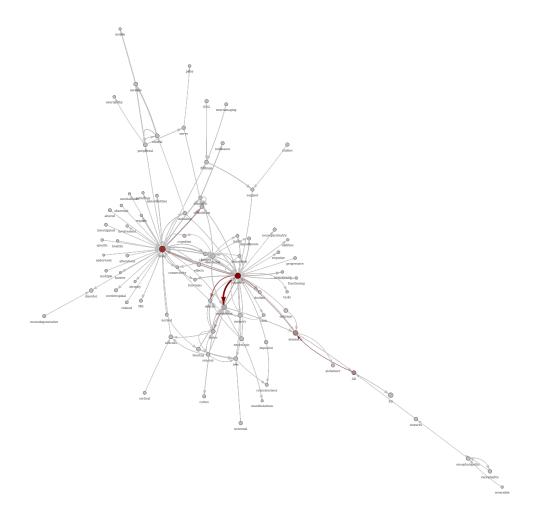


Figure 4: Filtered topic network (by weight). Layout based on Fruchterman-Reingold algorithm. Node size is proportional to topic-specific word probability provided by LDA. Edge width is proportional to topic-specific bigram weight provided by LDA2Net method. Node and edge color represent their betweenness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