

svd

August 27, 2022

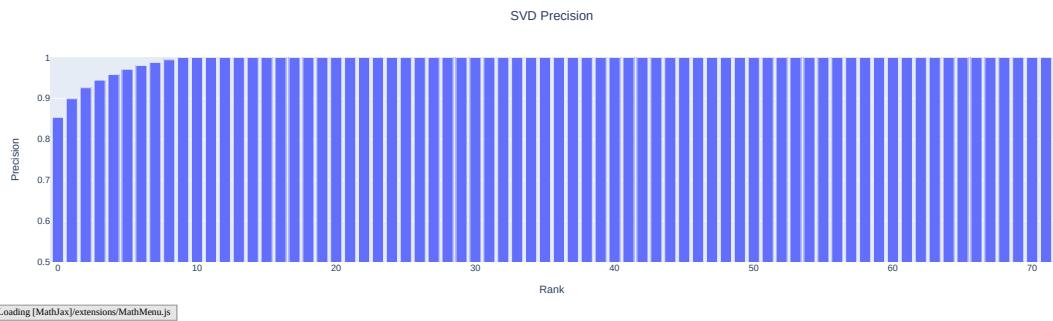
0.1 Prepare Data for SVD Analysis

Creating svd file for columns-humidity

0.2 SVD

Loading svd file for columns-humidity

0.2.1 Precision of SVD Reconstruction

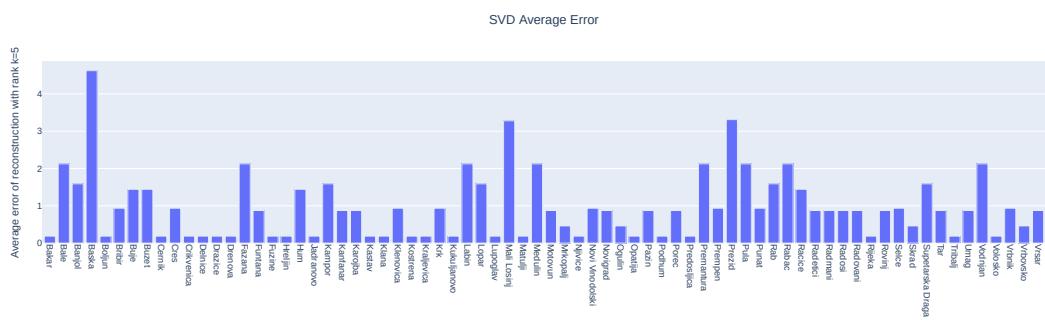


0.2.2 Full Reconstruction & Lower Rank Reconstruction

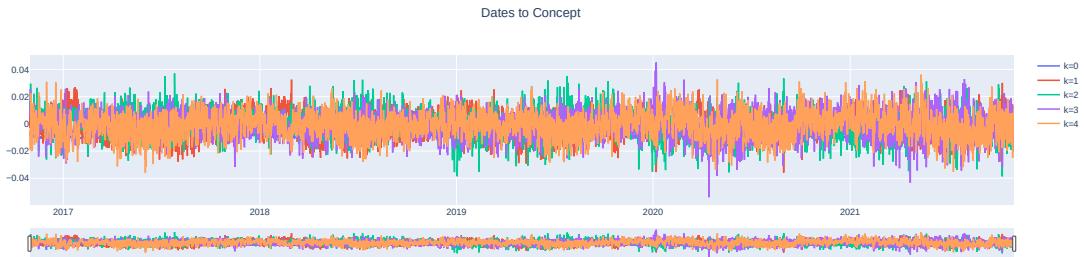
Diff: 4.785856615762843e-14

Diff reconstruction: 0.9695606734152513

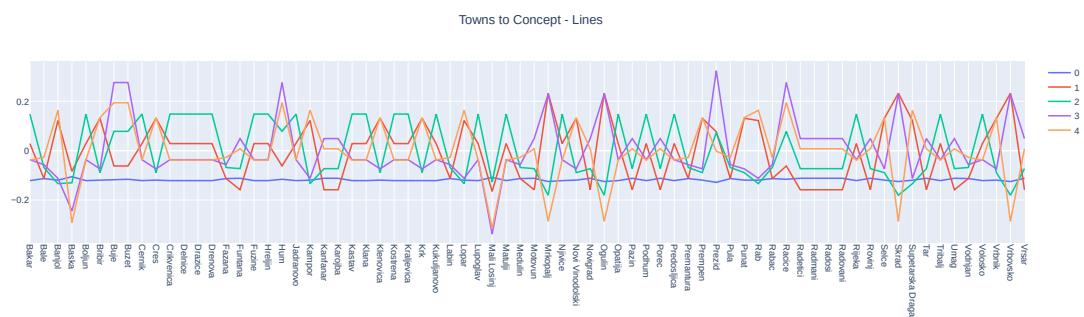
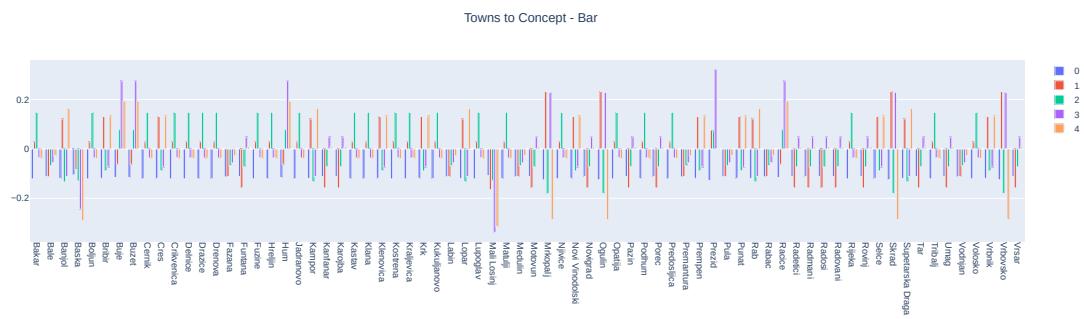
0.2.3 Average SVD Error



0.2.4 Dates to Concept - SVD_U



0.2.5 Towns to Concept - SVD_V

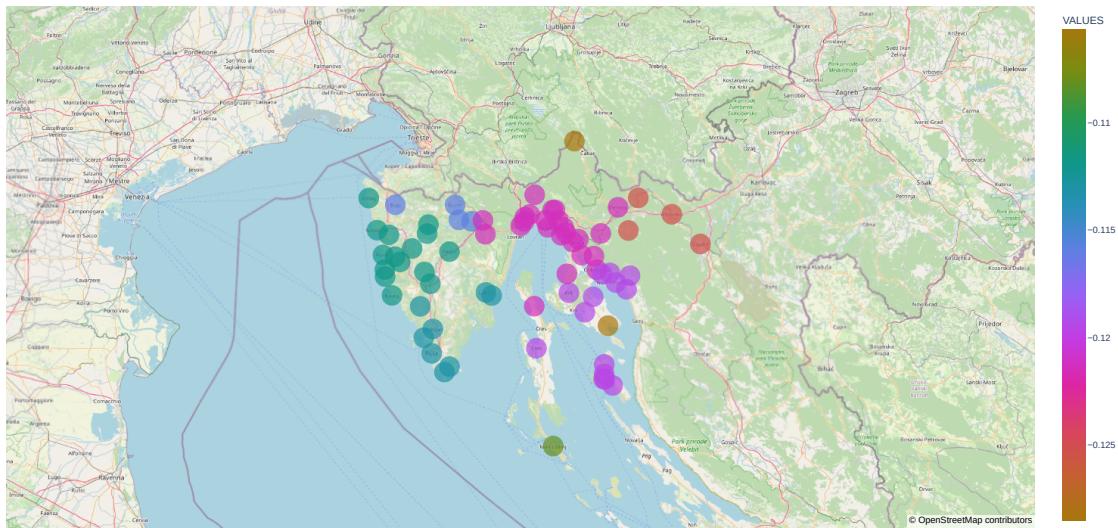


0.2.6 Singular Vector - SVD_S

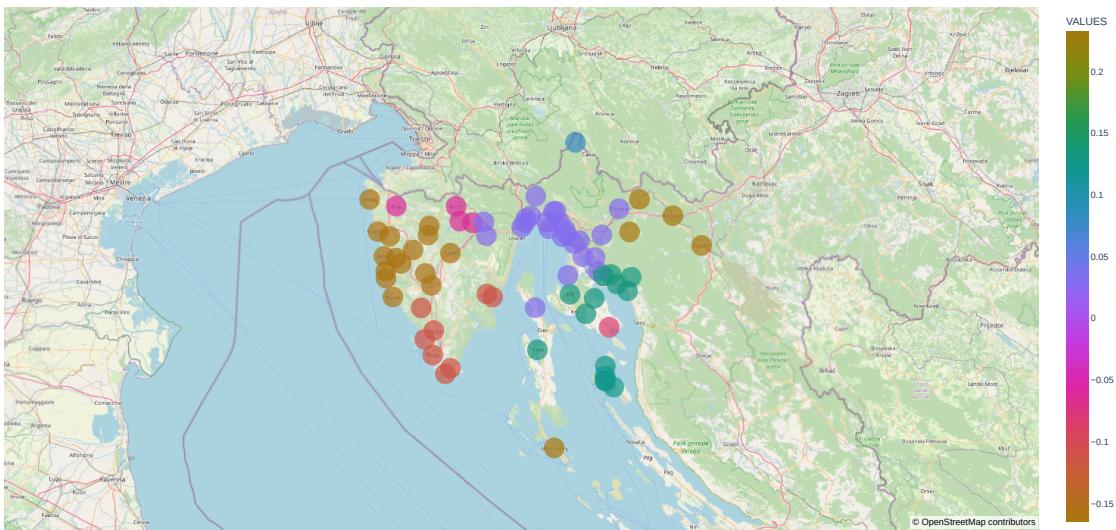
```
'75803.89607117951; 4053.8215361371404; 2387.6352966807217; 1652.0914741073727;  
1239.8196238390885; 1127.3209703086852; 825.9239336358328; 664.902666553453;  
571.2074230472492; 497.99171093302664; 7.511668529219464e-12;  
7.511668529219464e-12; 7.511668529219464e-12; 7.511668529219464e-12;  
5.8144165497903685e-12'
```

0.2.7 SVD Maps

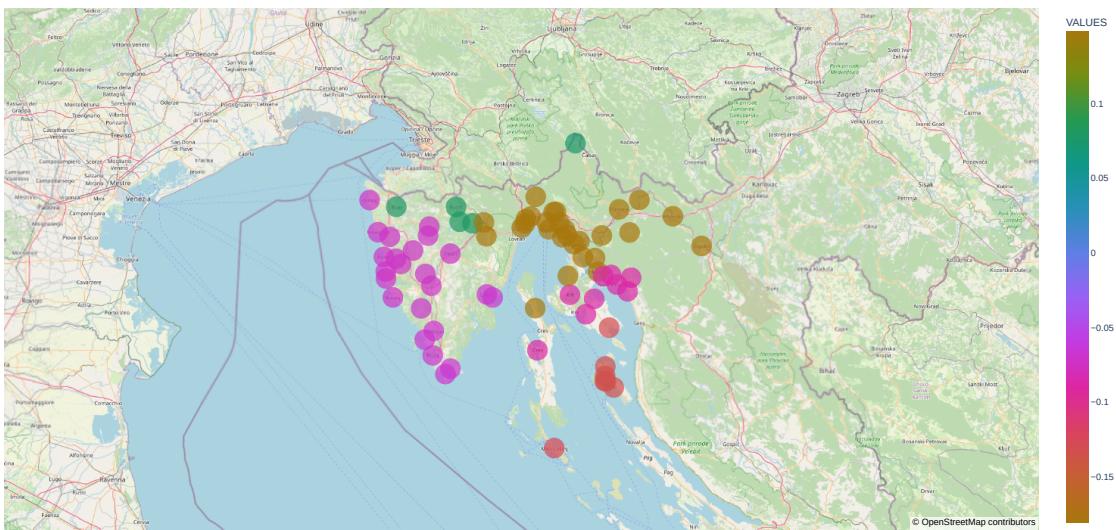
Ploting map for k = 0



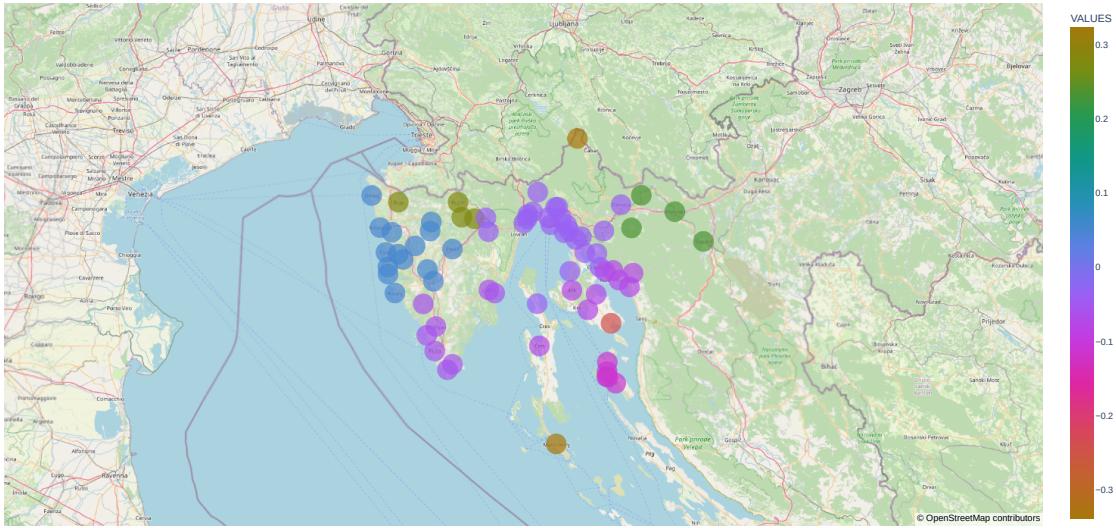
Plotting map for $k = 1$



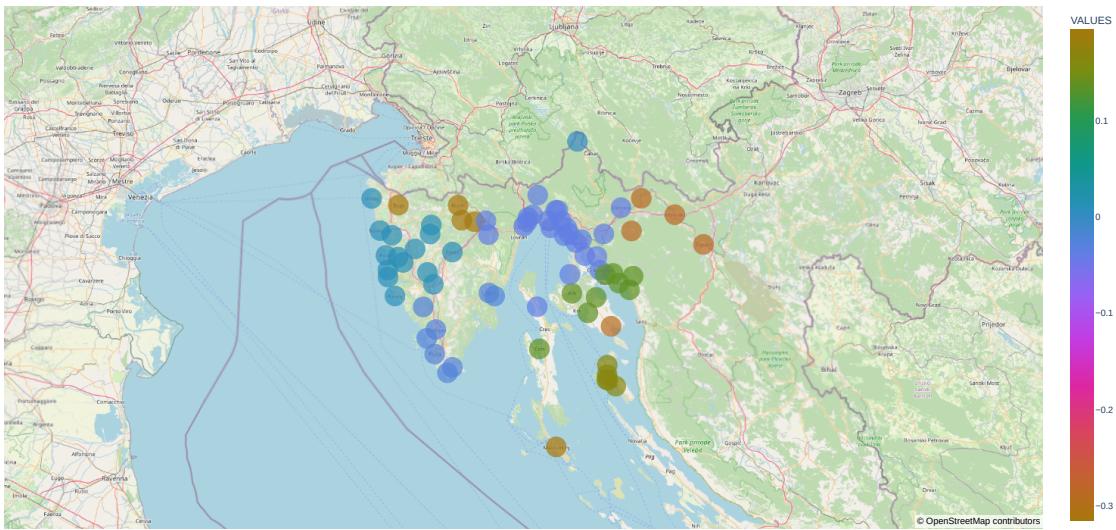
Plotting map for $k = 2$



Plotting map for $k = 3$



Plotting map for $k = 4$



1 Export to HTML

```
<IPython.core.display.Javascript object>

[NbConvertApp] Converting notebook svd.ipynb to HTML
[NbConvertApp] Writing 7659787 bytes to output/columns-humidity_svd.html
[NbConvertApp] Converting notebook svd.ipynb to pdf
/home/HDD/00-Development/016-Diplomski/venv/lib/python3.9/site-
packages/nbconvert/filters/datatypefilter.py:41: UserWarning: Your element with
mimetype(s) dict_keys(['text/html']) is not able to be represented.
```

```
warn()
[NbConvertApp] Support files will be in columns-humidity_svd_files/
[NbConvertApp] Making directory ./columns-humidity_svd_files
[NbConvertApp] Writing 63847 bytes to notebook.tex
[NbConvertApp] Building PDF
[NbConvertApp] Running xelatex 3 times: ['xelatex', 'notebook.tex', '-quiet']
[NbConvertApp] Running bibtex 1 time: ['bibtex', 'notebook']
[NbConvertApp] WARNING | bibtex had problems, most likely because there were no
citations
[NbConvertApp] PDF successfully created
[NbConvertApp] Writing 7109089 bytes to output/columns-humidity_svd.pdf
[NbConvertApp] Converting notebook svd.ipynb to HTML
[NbConvertApp] Writing 7599084 bytes to output/columns-humidity_svd_no_code.html
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