

# Svd

August 14, 2022

## 0.1 Prepare Data for SVD Analysis

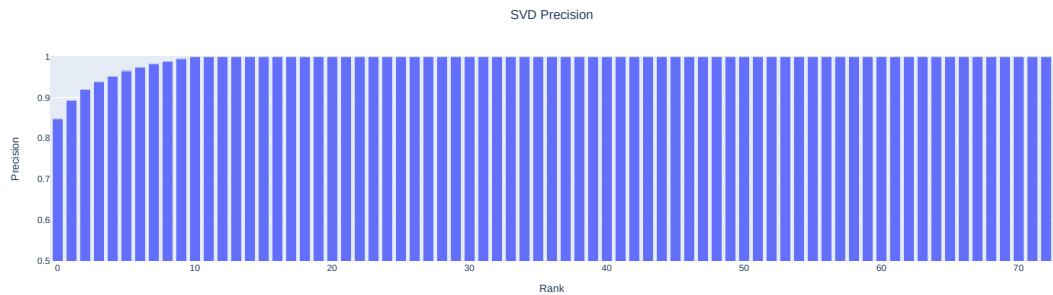
Creating folder svd\_plots/columns-humidity

Creating svd file for columns-humidity

## 0.2 SVD

Loading svd file for columns-humidity

### 0.2.1 Precision of SVD Reconstruction

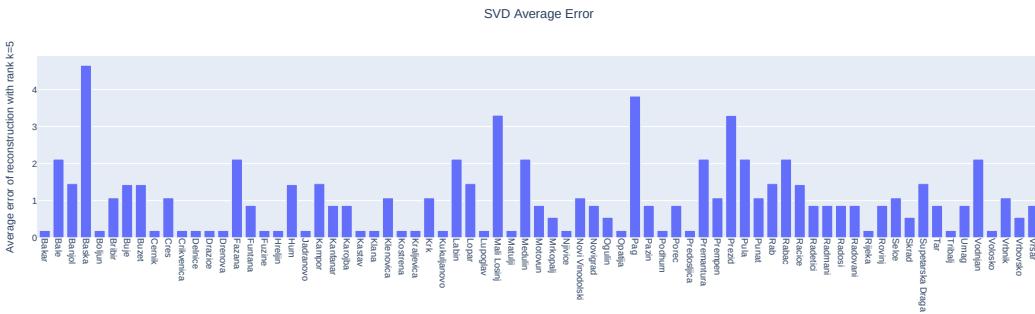


### 0.2.2 Full Reconstruction & Lower Rank Reconstruction

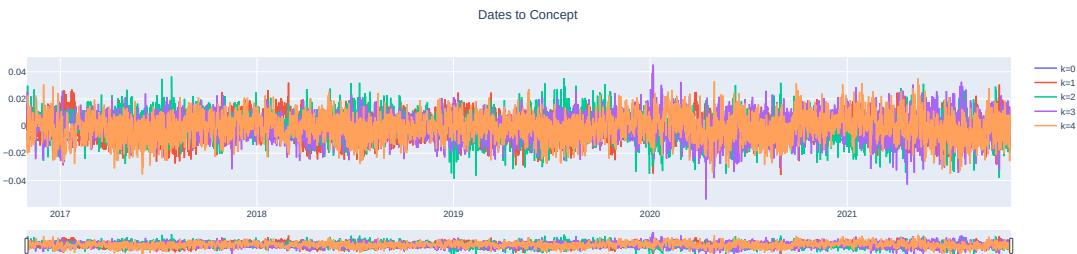
Diff: 5.84362077721052e-14

Diff reconstruction: 1.0243446051914882

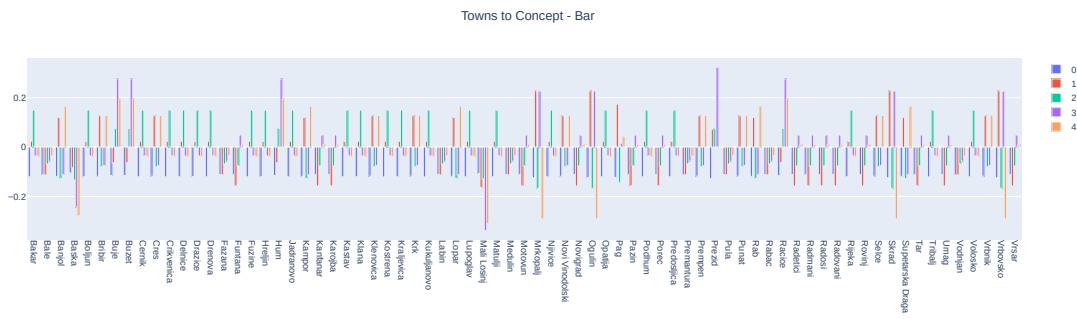
### 0.2.3 Average SVD Error

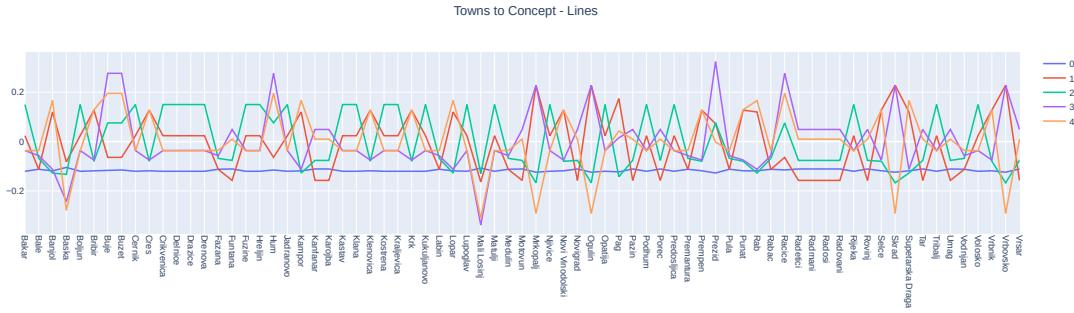


#### 0.2.4 Dates to Concept - SVD\_U



### 0.2.5 Towns to Concept - SVD\_V

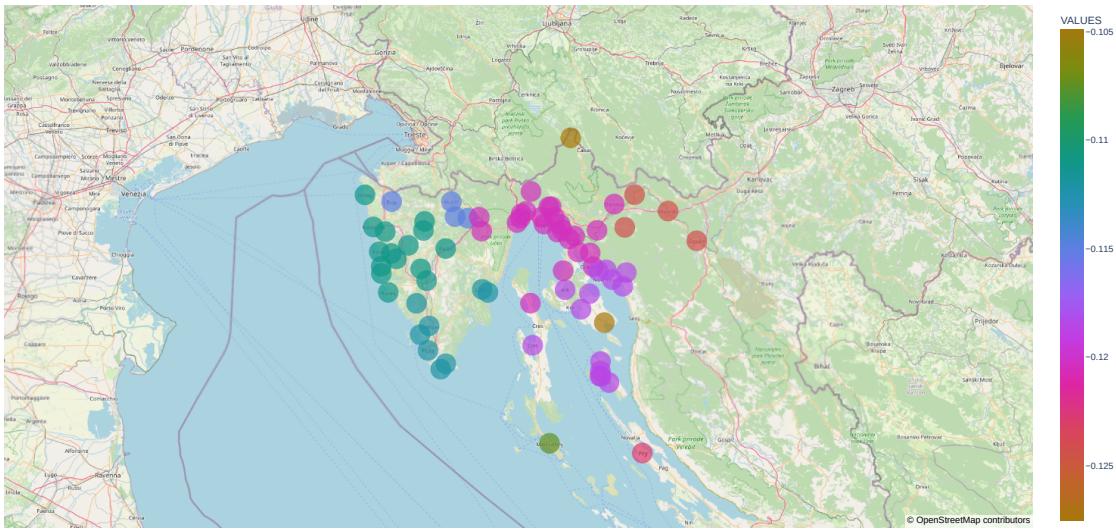




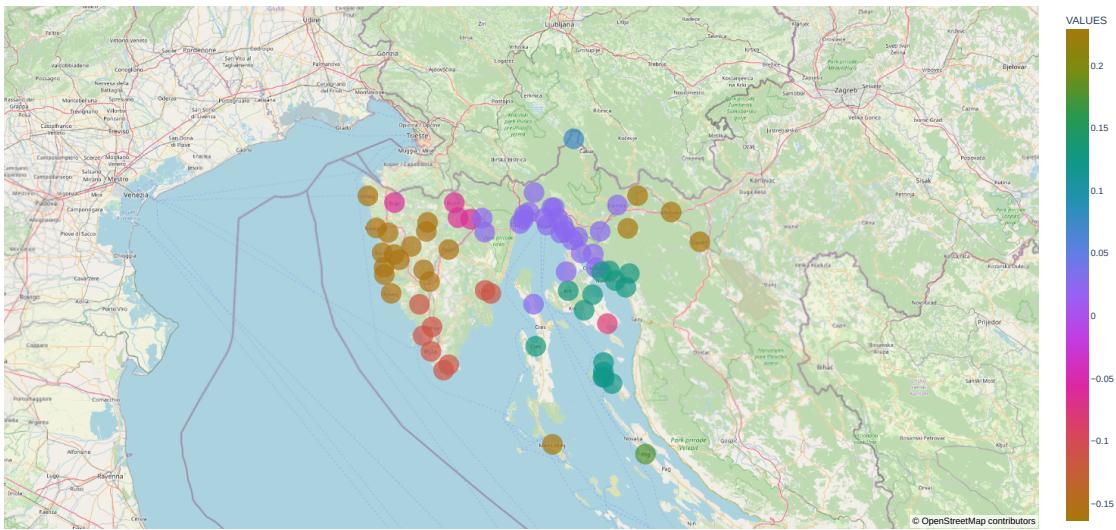
### 0.2.6 Singular Vector - SVD\_S

### 0.2.7 SVD Maps

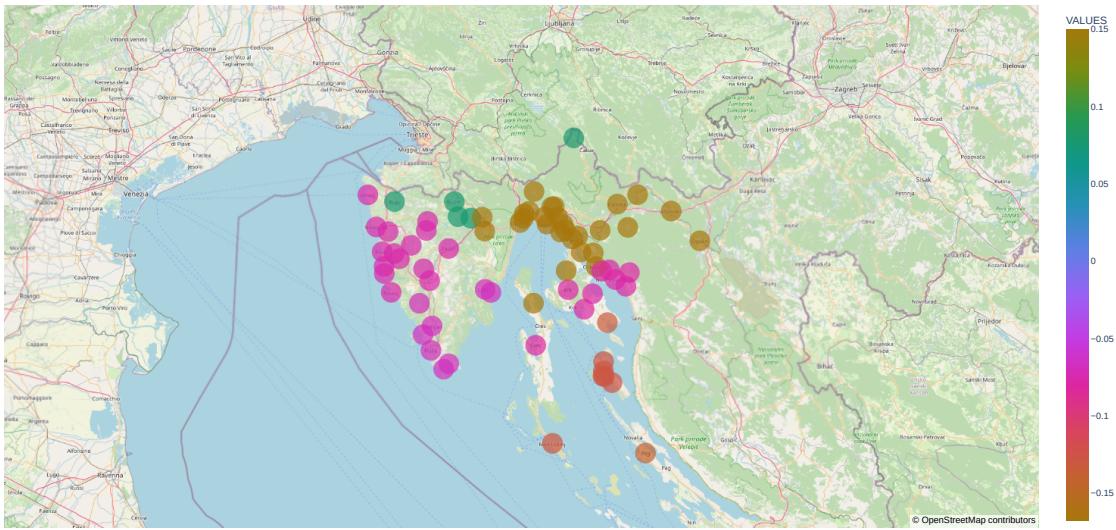
Ploting map for k = 0



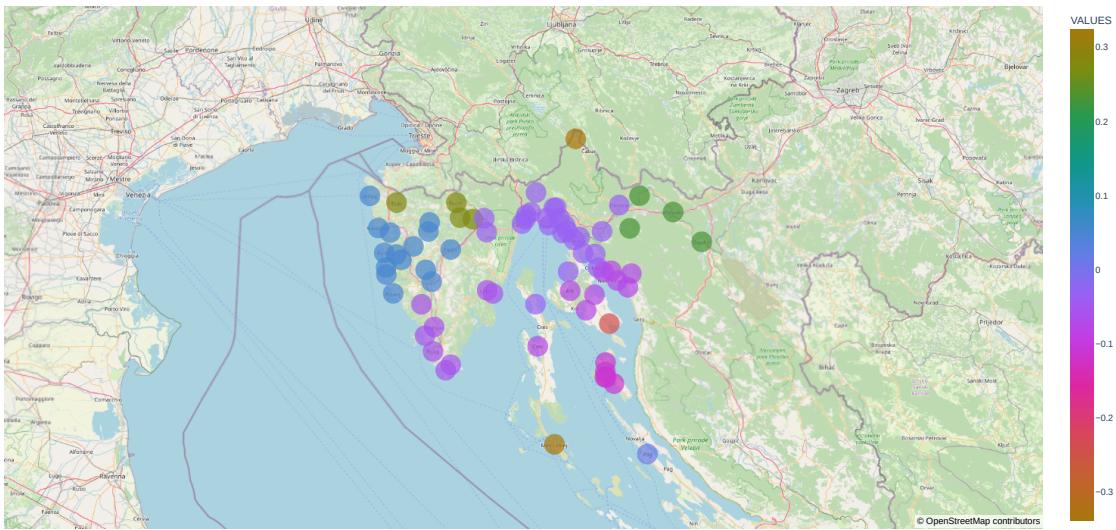
Plotting map for  $k = 1$



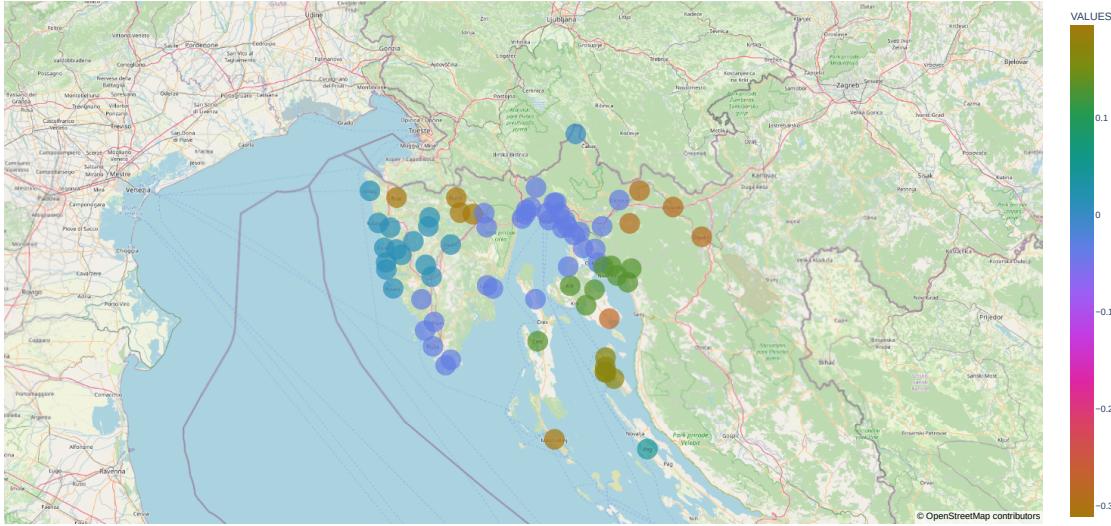
Plotting map for  $k = 2$



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 7664656 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 63867 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 7078223 bytes to output/columns-humidity\_svd.pdf