

svd

August 26, 2022

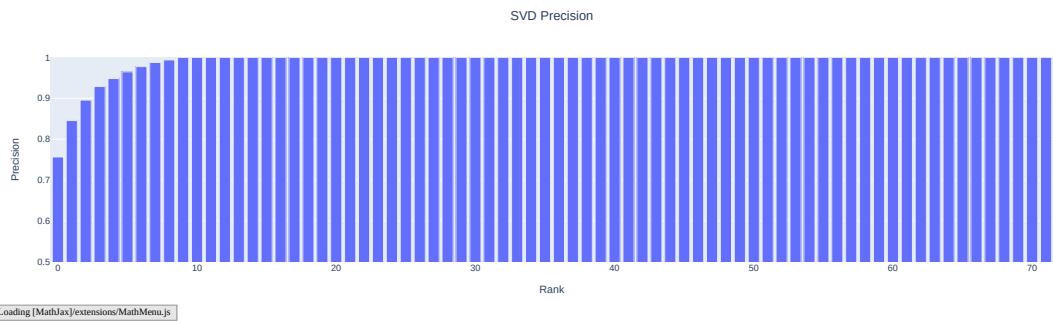
0.1 Prepare Data for SVD Analysis

Creating svd file for columns-tempC

0.2 SVD

Loading svd file for columns-tempC

0.2.1 Precision of SVD Reconstruction

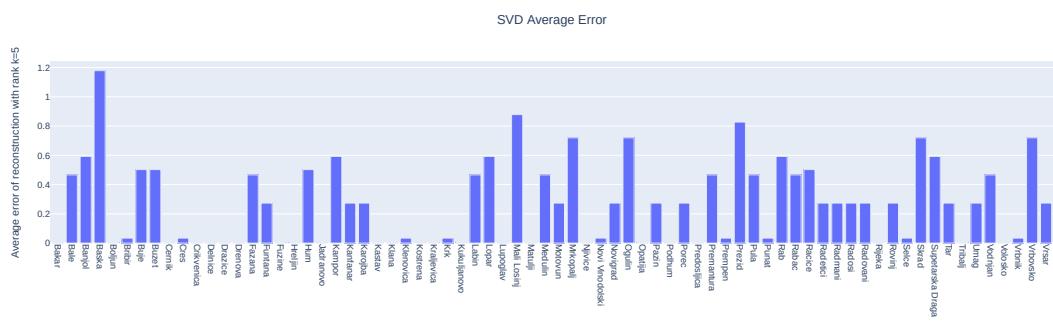


0.2.2 Full Reconstruction & Lower Rank Reconstruction

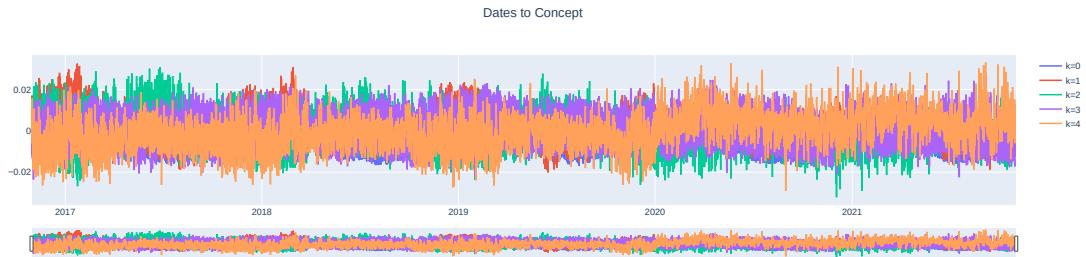
Diff: 1.7914569462398254e-14

Diff reconstruction: 0.2639171265337348

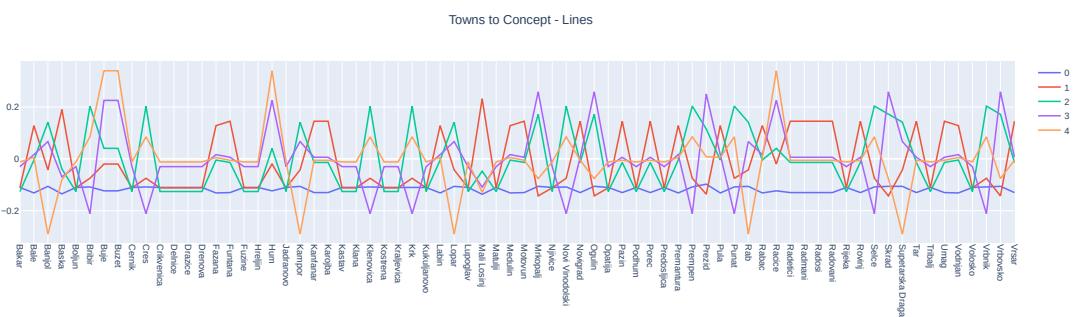
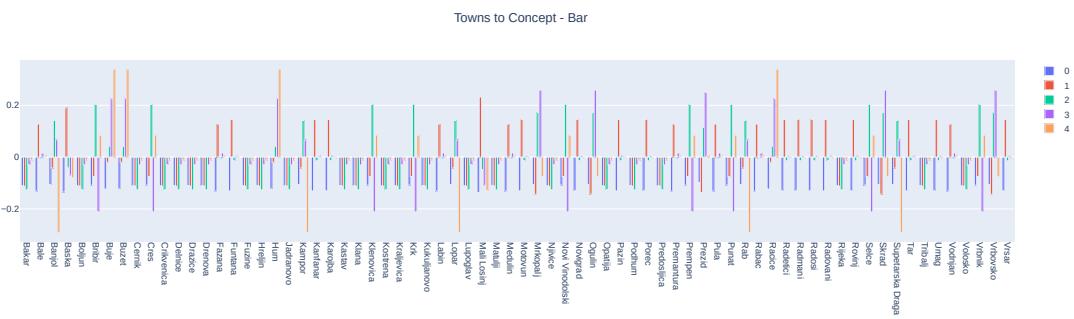
0.2.3 Average SVD Error



0.2.4 Dates to Concept - SVD_U



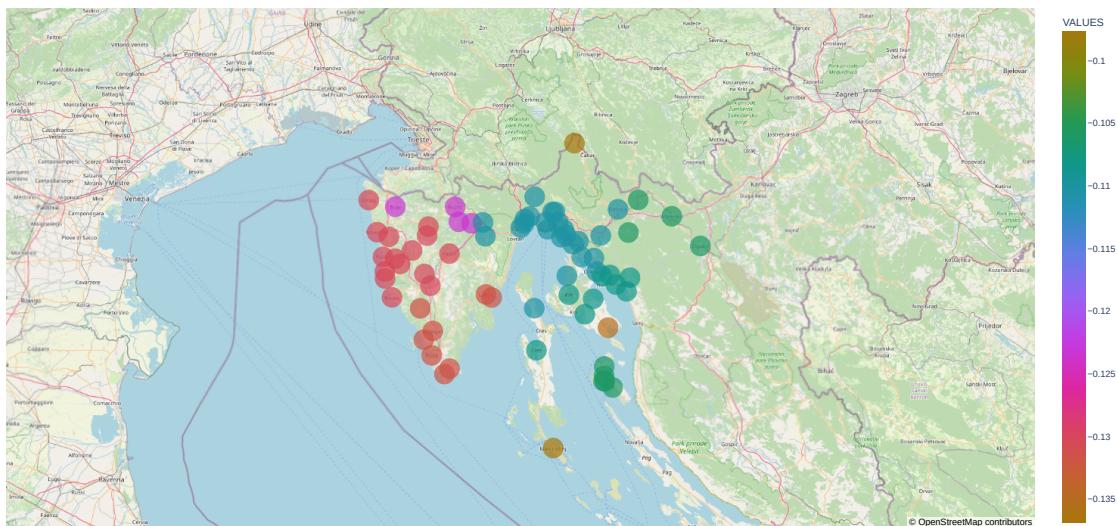
0.2.5 Towns to Concept - SVD_V



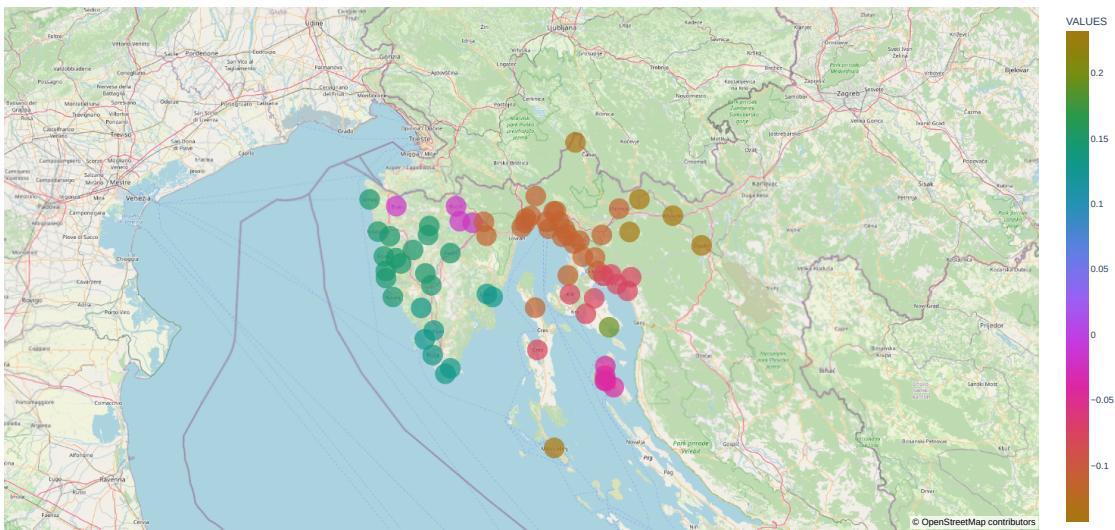
0.2.6 Singular Vector - SVD_S

0.2.7 SVD Maps

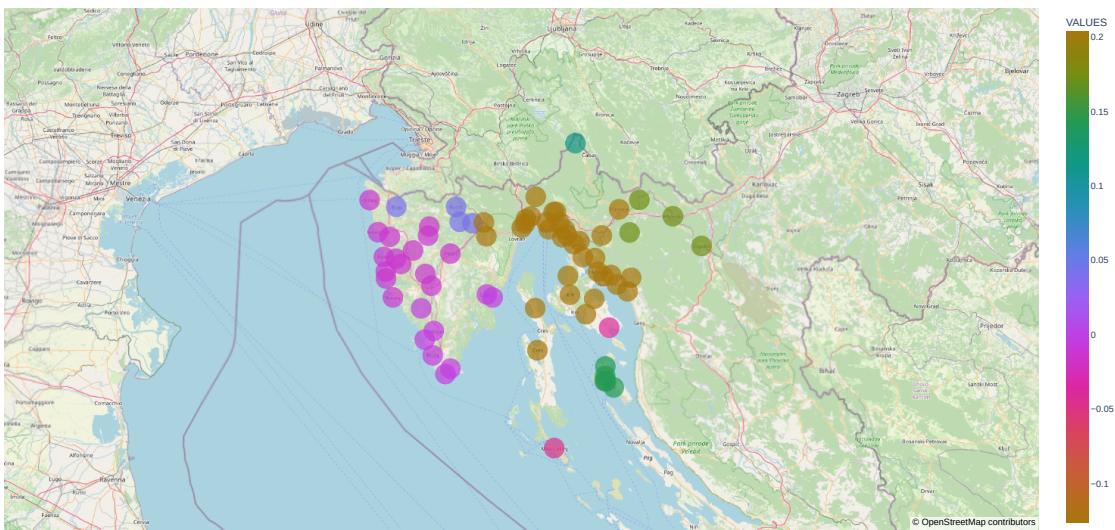
Ploting map for k = 0



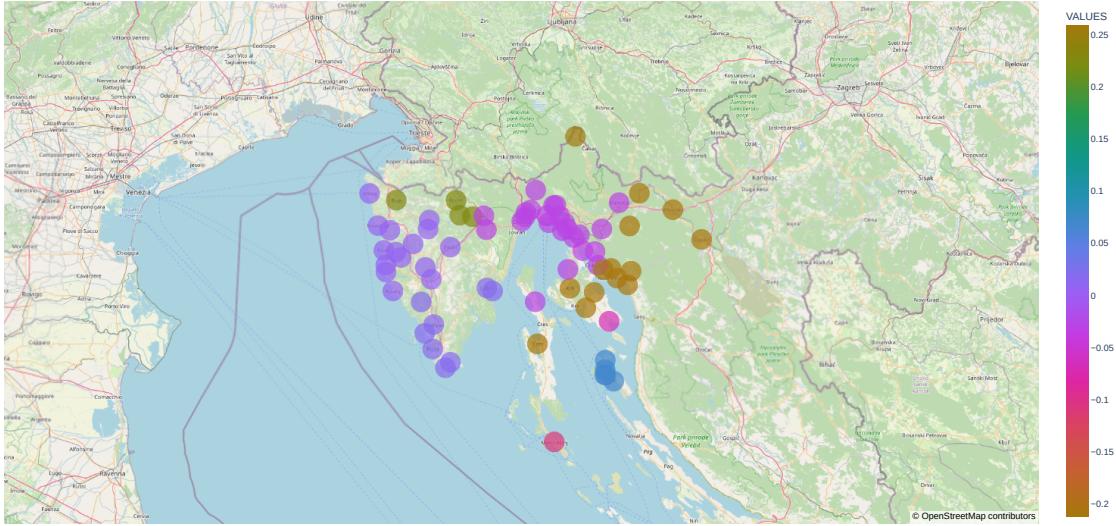
Plotting map for $k = 1$



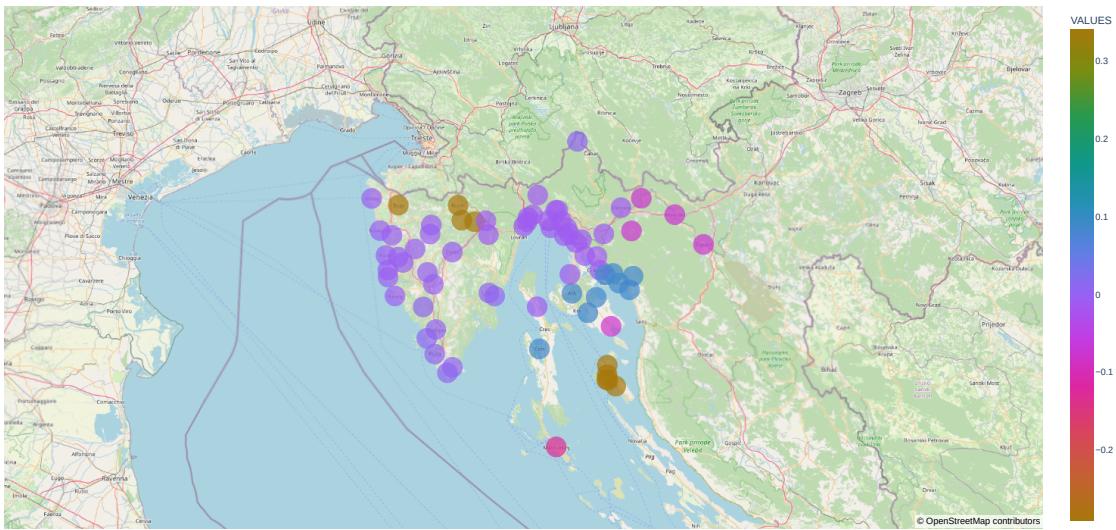
Plotting map for $k = 2$



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
Traceback (most recent call last):
  File "/home/HDD/00-Development/016-Diplomski/venv/lib/python3.9/site-
packages/nbformat/reader.py", line 18, in parse_json
    nb_dict = json.loads(s, **kwargs)
  File "/usr/lib/python3.9/json/__init__.py", line 346, in loads
```

```

    return _default_decoder.decode(s)
File "/usr/lib/python3.9/json/decoder.py", line 337, in decode
    obj, end = self.raw_decode(s, idx=_w(s, 0).end())
File "/usr/lib/python3.9/json/decoder.py", line 353, in raw_decode
    obj, end = self.scan_once(s, idx)
json.decoder.JSONDecodeError: Expecting ',' delimiter: line 115664 column 25
(char 8110080)

```

The above exception was the direct cause of the following exception:

```

Traceback (most recent call last):
  File "/home/HDD/00-Development/016-Diplomski/venv/bin/jupyter-nbconvert", line
8, in <module>
    sys.exit(main())
  File "/home/HDD/00-Development/016-Diplomski/venv/lib/python3.9/site-
packages/jupyter_core/application.py", line 269, in launch_instance
    return super().launch_instance(argv=argv, **kwargs)
  File "/home/HDD/00-Development/016-Diplomski/venv/lib/python3.9/site-
packages/traitlets/config/application.py", line 846, in launch_instance
    app.start()
  File "/home/HDD/00-Development/016-Diplomski/venv/lib/python3.9/site-
packages/nbconvert/nbconvertapp.py", line 414, in start
    self.convert_notebooks()
  File "/home/HDD/00-Development/016-Diplomski/venv/lib/python3.9/site-
packages/nbconvert/nbconvertapp.py", line 588, in convert_notebooks
    self.convert_single_notebook(notebook_filename)
  File "/home/HDD/00-Development/016-Diplomski/venv/lib/python3.9/site-
packages/nbconvert/nbconvertapp.py", line 551, in convert_single_notebook
    output, resources = self.export_single_notebook(
  File "/home/HDD/00-Development/016-Diplomski/venv/lib/python3.9/site-
packages/nbconvert/nbconvertapp.py", line 479, in export_single_notebook
    output, resources = self.exporter.from_filename(
  File "/home/HDD/00-Development/016-Diplomski/venv/lib/python3.9/site-
packages/nbconvert/exporters/exporter.py", line 189, in from_filename
    return self.from_file(f, resources=resources, **kw)
  File "/home/HDD/00-Development/016-Diplomski/venv/lib/python3.9/site-
packages/nbconvert/exporters/exporter.py", line 207, in from_file
    nbformat.read(file_stream, as_version=4), resources=resources, **kw
  File "/home/HDD/00-Development/016-Diplomski/venv/lib/python3.9/site-
packages/nbformat/__init__.py", line 170, in read
    return reads(buf, as_version, capture_validation_error, **kwargs)
  File "/home/HDD/00-Development/016-Diplomski/venv/lib/python3.9/site-
packages/nbformat/__init__.py", line 88, in reads
    nb = reader.reads(s, **kwargs)
  File "/home/HDD/00-Development/016-Diplomski/venv/lib/python3.9/site-
packages/nbformat/reader.py", line 72, in reads
    nb_dict = parse_json(s, **kwargs)
  File "/home/HDD/00-Development/016-Diplomski/venv/lib/python3.9/site-

```

```
packages/nbformat/parser.py", line 21, in parse_json
    raise NotJSONError(("Notebook does not appear to be JSON: %r" % s)[:77] +
..."") from e
nbformat.parser.NotJSONError: Notebook does not appear to be JSON: '{\n "cells": [\n   {\n     "cell_type": "c...
[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-tempC_svd_files/
[NbConvertApp] Making directory ./columns-tempC_svd_files
[NbConvertApp] Writing 67022 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 7133392 bytes to output/columns-tempC_svd.pdf
[NbConvertApp] Converting notebook svd.ipynb to HTML
[NbConvertApp] Writing 7601719 bytes to output/columns-tempC_svd_no_code.html
```