

## Title: Mapipedia: A Collaborative Platform for Visualising Geospatial Time-Series Data and Interactive Learning

This paper introduces Mapipedia, an interactive, web-based platform designed to simplify the display of geospatial time-series data through maps and graphs. Mapipedia is an open, educational, and collaborative resource, offering both public and private use options. Users can enhance their data insights by adding explanatory events and engaging with content through comments, likes, and following pages for updates as new data is made available.

To illustrate Mapipedia's capabilities, several use cases are presented. One example tracks global life expectancy trends since 1800 using an animated heatmap, accompanied by line graphs and events that explain life expectancy drops due to factors such as war, disease, and famine. Another case visualizes CO2 emissions per capita over time, focusing on the world's largest polluters, through graphs and animated maps. The platform also highlights the historical formation of the United States, showing an animated map of states joining the union and the flags used at the time.

Mapipedia also supports visualizing historical journeys, such as Captain James Cook's first voyage to Australia, where users can explore his route and key events. Additionally, it enables the display of GPS wildlife tracking data, such as the 2014 fall migration of white storks, showing both migration paths and flight heights, revealing daily patterns. Another feature allows users to map their geotagged photos over time, easily sharing their travel memories by uploading images to the platform.

Beyond these examples, the paper highlights how Mapipedia promotes collaboration, allowing users to share data, follow pages, and comment on specific datasets, fostering a community-driven learning environment.

Use Case Links (best views on a larger screen). Press Play to start the animations:

1. Average Life Expectancy by Country since 1800:  
[https://mapipedia.com/s/u/drdave/average\\_life\\_expectancy\\_by\\_country\\_since\\_1800.html](https://mapipedia.com/s/u/drdave/average_life_expectancy_by_country_since_1800.html)
2. CO2 Emissions per Capita since 1800:  
[https://mapipedia.com/s/u/drdave/co2\\_per\\_capita.html](https://mapipedia.com/s/u/drdave/co2_per_capita.html)
3. Formation of the USA:  
[https://mapipedia.com/s/u/drdave/united\\_states\\_of\\_america\\_formation.html](https://mapipedia.com/s/u/drdave/united_states_of_america_formation.html)
4. Captain James Cook's First Voyage to Australia:  
[https://mapipedia.com/s/u/drdave/captain\\_james\\_cook.html](https://mapipedia.com/s/u/drdave/captain_james_cook.html)
5. GPS Wildlife Tracking: Fall Migration of White Storks in 2014:  
[https://mapipedia.com/s/u/drdave/fall\\_migration\\_of\\_white\\_storks\\_in\\_2014.html](https://mapipedia.com/s/u/drdave/fall_migration_of_white_storks_in_2014.html)
6. Mapping Geotagged Photos:  
<https://mapipedia.com/s/u/drdave/demo.html>