The topic for this masters thesis is "Event Based Storage of Geospatial Vector Data". The questions asked are:

- How does a model for storing event based geospatial vector data look like?

- What are the differences from the traditional "snapshot" model?

- How do we measure the benefits of the storage footprint of this data?

Geospatial vector data has traditionallybeen distributed as snapshot datasets. This means that the data is distributed as complete datasets between two versions of the data, even though only a small part of the data has changed.

define "geospatial vector data"

0.1   From Physical to Digital Maps

Maps are important tools for effective communication about geographic space and topology. Early humans probably used simple representations of the world around them, drawn in the dirt, to communicate with their peers on the African svannah about where the best hunting grounds were, and where they could find water, food and shelter. Not least, it would be important to describe to your friends where you last saw a dangerous predator, like a lion. Such representations are what we today would call maps. Maps are physical representations of the geographic world, and lets us connect our internal metaphysical models of the world (cognitive map) with the physical world, and communicate them with other humans.

Humans are storytelling people. A popular historian, Yuval N. Harari, says that our ability to tell stories, both fictional and factual, are one of the most important attributes that set us apart from other animals during our cognitive evolution, more than 40.000 years ago. This ability to tell and believe in stories made it possible for large groups of humans to cooperate, and build the highly organized society we live in, in the modern day. The map has undoubtedly been one of the most important tools for this cooperation.

fact-check

With the establishment of information science as a field of study by scholars such as Harry Nyquist and Ralph Hartley during the 20s, and expanded upon by Claude Shannon during the 40s, and the development of computer technology during the 50s and 60s, GISc saw its first explorations during this time. Roger Tomlinson, a Canadian geographer, is counted by many as one of the pioneers in this field of study.

The 70s saw further advanecment of hardware and software made for spatial analysis, and in the 80s the personal computer proliferated and made computers with GIS more accessible.

In the 90s GPS and remote sensing became more integrated with GIS, and accurate and real-time data collection became a thing. The internet played a crutial role in the dissemination of geographic information, and started the democratization of geographic data. One important service in this regard is OSM.

The 2000s saw the proliferation of web-based mapping services, and the use of GIS in fields such as epidemiology, transportation planning etc. The use of GIS has become widespread in government, business and academia.

Today, artificial intelligence, big data analysis and augmented reality are large topics in GISc research.