

1 History

Old field. Cave paintings were first, looked at world and made exact picture. William Playfair. How do we choose to be represent our data? What are the underlying principles. Edward Tufte, the visual display of quantitative information. Readings in Information Visualization, Using Vision to Think.

Some definitions

Definition 1.1. *Information visualization: a mapping between discrete data and visual representation. communication of abstract data through the use of interactive visual interfaces. utilizes computer graphics and interaction to assist humans in solving problems.*

Data visualization usually deals with quantitative data, information visualization tries to represent *abstract* data. Information design starts with data that already has a clear structure. With information visualization, we first need to discover the structure, and a visualization is successful if it reveals the structure.

Reduction : data is aggregated into structures which are visualized. **Spatial Layout**

2 Data Types

Basic Data Types

- 1,2,3 dimensional
- multi-dimensional
- temporal
- tree
- network
- text, audio, image, video

Our Data Types

- Qualitative: categorical / nominal variables.
- Qualitative: ordinal variables are categorical with an order
- Qualitative: Interval variables.. differences can be compared
- Quantitative: Geophysical
- time: quantitative and ordinal terms
- structures: undirected graphs, directed graphs, trees, blah blah

Info Viz Tasks

- overview of data
- zoom zoom in on item of interest
- filter filter out uninteresting items
- details on demand: show details of one or more items
- relate
- more