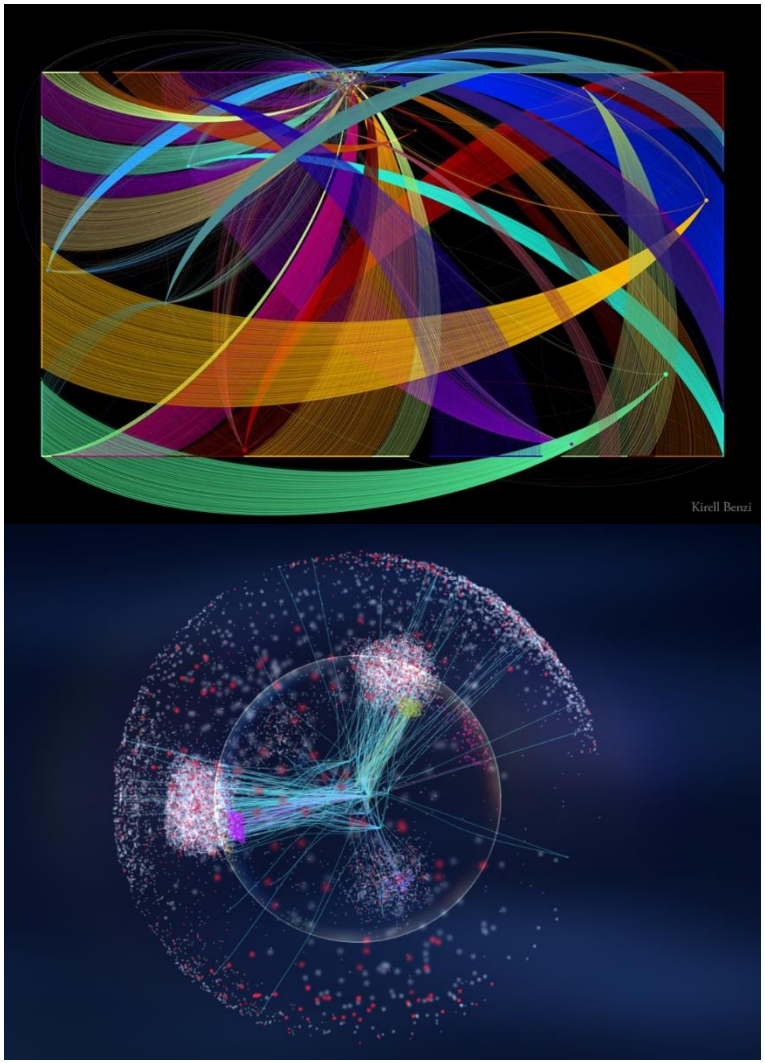
Data visualization – ***Why is data visualization important?***



Data visualization is important because it permits to visualize the data.
It makes easier to understand complex data.

Title: Carbon copy – inside the box
Author: Kirell Benzi
Publication date: 2017
Aspect investigated:
The data visualization investigates the dynamics of corporate communication within a Swiss company by mapping email exchanges between employees and external correspondents over a single day. The key aim is to reveal the structure, flow, and intensity of these communications, highlighting how information moves within and outside the organization.

Description:
This visualization is a **network graph** that represents relationships through nodes (people) and edges (communication links). The graph depicts a snapshot of ***email exchanges***, with each dot representing a person involved in the communication, either internal (employees) or external (correspondents). The color-coded nodes distinguish various business units, while the lines (edges) show the communication between them. Employees are centrally clustered, whereas external correspondents are positioned around the perimeter, reflecting their relative roles in the communication flow. In this context, the visualization offers **significant insight** into organizational communication patterns, helping to understand *how different units interact internally and externally*, the *frequency* of these exchanges and the *intensity* of communication between parties.

Additionally, an **interactive WebGL version** of the data visualization transforms the static representation into a **dynamic digital ecosystem**. This interactive version allows viewers to explore email exchanges, offering features such as filtering by anonymized business units, adjusting playback speed, and exploring different colour settings through an intuitive sidebar interface. This interactive version renders massive datasets in real time, providing a unique opportunity to navigate through the intricacies of corporate communication landscapes.

Live 3d graph : https://massive-emails-viz.netlify.app/

Source: Inside The Box - Kirell Benzi inside the project https://www.kirellbenzi.com/art/carbon-copy

Dataset Variables:

- **Business unit membership:** encoded through colour.
- **Number of emails exchanged:** encoded through the quantity.
- **Position in or outside the organization:** encoded through node placement

Visual Variables:

- **Colour (hue):** different colours represent distinct business units within the company.
- **Size and quantity:** the thickness and number of the lines between nodes reflect the magnitude and frequency of communication between parties.
- **Shape (symbolization):** circular nodes symbolize the employees and bold lines symbolize the external correspondents.
- **Position:** the layout places internal employees toward the centre, with external correspondents distributed around the periphery.

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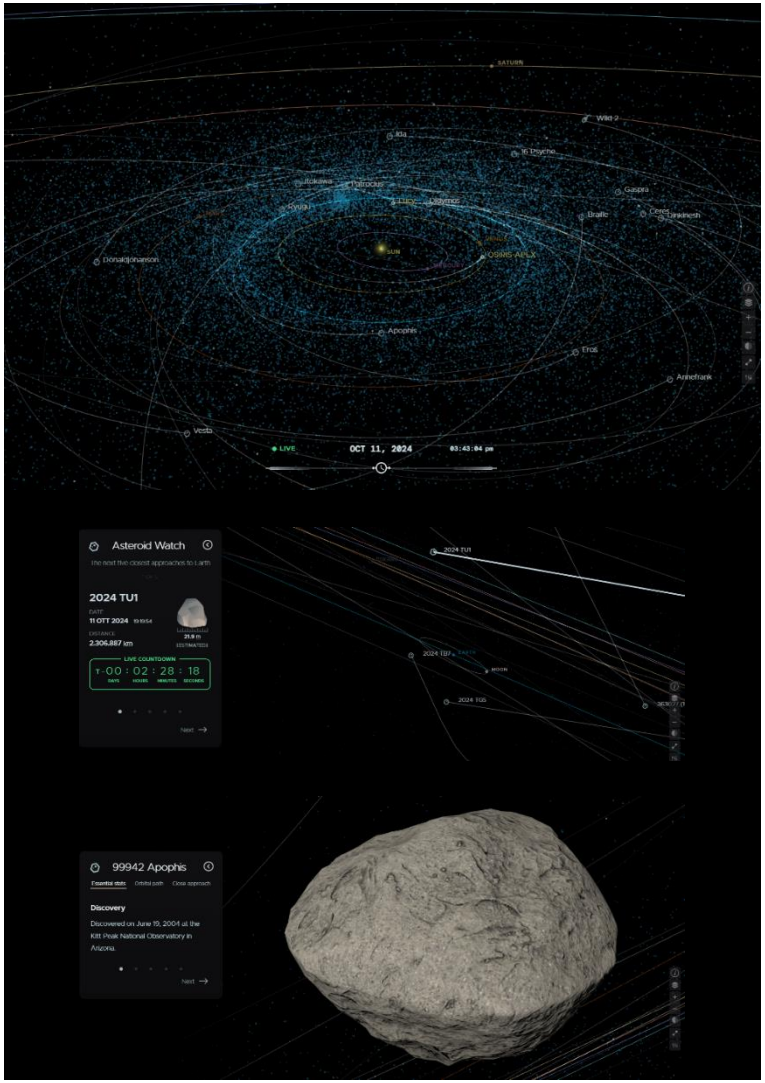

Data visualization is important because it enables a clear understanding of complex data.
It makes information accessible not only to scientists and data analysts but to everyone.

Title: Eyes on asteroids
Author: NASA
Publication date: ongoing (available in real-time)
Aspect investigated:
The visualization investigates the real-time tracking of asteroids in our solar system, focusing on the positions, trajectories, and potential risks posed by near-Earth objects (NEOs). This tool provides both scientists and the public with a detailed and up-to-date look at the current state of the asteroid belt and other celestial bodies in space.

Description:
This is a **3D interactive network tool** designed to represent connections and relationships between celestial bodies (nodes) in the solar system, such as asteroids and planets, and the paths (edges) they travel along. The tool offers a real-time representation of the positions of asteroids and their trajectories within the solar system, with a detailed 3D model that allows users to explore and zoom in or out to view different regions of space. The real-time data feed provides up-to-date information on the positions and trajectories of asteroids, making the visualization highly informative and relevant to current events.

This visualization helps scientists, and the public understand the dynamics of our solar system; particularly in tracking **near-Earth objects (NEOs)**, which could potentially pose hazards to our planet, thus providing essential data for monitoring and mitigating these risks.

Source: https://eyes.nasa.gov/apps/asteroids/#/home

Dataset Variables:

- **Real-time positions of asteroids and celestial bodies.**
- **Trajectories based on velocity and gravitational influences.**
- **Asteroid sizes relative to other objects in the solar system.**

Visual Variables:

- **Colour (hue):** different colours are used to represent various celestial bodies, including asteroids and planets.
- **Size (scale):** asteroids are represented at sizes scaled relative to their real dimensions, allowing users to visually understand their comparative sizes.
- **Position (3D placement): t**he objects' positions are depicted in real-time within a 3D model of the solar system, allowing users to see where the asteroids and other celestial bodies are currently located relative to each other.