

# **Data privacy. Introduction**

Vicenç Torra

November, 2022

# Introduction

---

## Goals: / Topics

- Privacy from three different perspectives:  
anonymous communications/privacy enhancing technologies, privacy preserving data mining, statistical disclosure control
- Basic concepts: anonymity, disclosure, data utility, and privacy by design
- Privacy models
- Evaluation of data privacy model
- Social and ethical aspects related to privacy

# Introduction

---

## Contents: (Data privacy)

- Description of the field
- Definitions and different approaches
- Technical perspective  
(i.e., out: laws, social, and psychological issues)
- *Integrated* technical perspective
  - Statistical disclosure control (SDC)
  - Privacy preserving data mining (PPDM)
  - Privacy enhancing technologies (PET) – Communications

# Introduction

---

## Contents:

- Motivation
- Terminology
- Classification of protection methods: roadmap
- Privacy models (overview)
- User privacy
- Computation-driven methods:  
Differential privacy, cryptographic approaches
- Privacy models and disclosure risk measures
- Data-driven methods:  
Masking methods
- Information loss measures

# References

---

- Slides and other material here: <http://www.mdai.cat/privacy/>
- Also, examples using packages `sdcMicro` and `sdcTable` in R for microdata protection and for tabular data protection.