



Computer science and legal methods for enforcing the personal rights of non-discrimination and privacy in ICT systems

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<http://enforce.di.unipi.it>

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ICT Pervasiveness

ICT services are provided based on **personal data** collected at extreme detail and at mass level



What **we** buy



What **we** search for



Whom **we** interact with



Where **we** go

ICT Threats

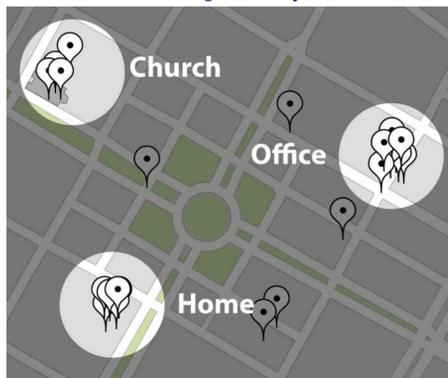
While on one side the use of ICT technologies brings great benefit to everybody, on the other side the massive collection of our personal data poses new challenges to enforce fundamental rights: privacy and non-discrimination

PRIVACY

people have the right to control the processing of their own personal data

*Who collects our personal information and how? Are the regulations in force a sufficient protection, or technical solutions need to be applied? Is privacy a **human right** that risks to become a chimera in the digital era?*

Locations Reported by a User



Privacy threat

User's identity and sensitive information could be discovered from the locations reported to ICT services

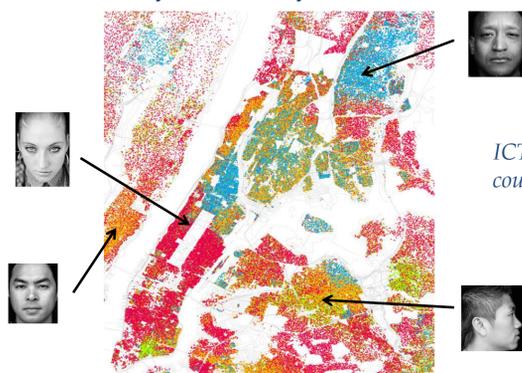


NON-DISCRIMINATION

people have the right not to be subject to unfair decisions based on their own personal data

*How is our personal information used? Can **negative effects** of automated decisions be prevented? Is discrimination an **illegal behavior** that risks to become a hidden feature of ICT systems?*

City Residents by Race



Discrimination threat

ICT services for automated credit scoring could use residence as a proxy for race or gender to deny credit to minorities



Project Objectives

Starting from the requirements derived by the current regulation and legal debate, we intend to develop formal models and technical tools to enforce the intertwined **personal rights** of non-discrimination and individual privacy.

- ❖ On the **legal perspective**, our objective consists of a systematic and critical review of the existing regulations, and in the design of quantitative measures of the notions of anonymity, privacy and discrimination that are adequate for enforcing such personal rights.
- ❖ On the **computer science perspective**, we aim at designing legally-grounded technical solutions for discovering and preventing discrimination in Decision Support Systems (DSS) and for preserving and enforcing privacy in Location Based Systems (LBS).

We aim at a **new approach in the development of ICT tools** consisting in the native integration of legal norms and resulting in a technical standard which is legally recommendable and socially trustworthy.