



MILAN | NOVEMBER 2019

MONITORING AND SECURITY OF THE SMART CITY

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linksfoundation.com



An aerial photograph of a city, likely Milan, showing a mix of residential buildings, green spaces, and infrastructure. Overlaid on the image is a diagram with a central dark blue circle containing the text 'CITY: A COMPLEX ECOSYSTEM'. Five lines radiate from this central circle to five smaller dark blue circles arranged in a pentagon around it. These smaller circles are labeled 'SECURITY', 'COMMUNICATIONS', 'ENERGY', 'GOVERNANCE', and 'MOBILITY'.

SECURITY

MOBILITY

**CITY:
A COMPLEX
ECOSYSTEM**

GOVERNANCE

COMMUNICATIONS

ENERGY

7,5 Million citizens living and working in a risky area

88%

Municipalities in hydological risky area

SECURITY

-30% DAMAGES

70%

Municipalities with buildings in a risky area

COMMUNICATIONS

163 hrs/year

Lost in traffic jam (Rome)

81%

Prefers to own a vehicle

MOBILITY

+30% ACCESS

1%

electric

GOVERNANCE

+10 DESI

22%

Access BUL (vs 58% EU)

20%

Citizens use online services

ENERGY



7,5 Million citizens living and working in a risky area

88%

Municipalities in hydological risky area

SECURITY

-30% DAMAGES

70%

Municipalities with buildings in a risky area

COMMUNICATIONS

163 hrs/year

Lost in traffic jam (Rome)

MOBILITY

**-15% TdP
-15% EMIS.**

81%

Prefers to own a vehicle

1%

electric

GOVERNANCE

+10 DESI

22%

Access BUL (vs 58% EU)

20%

Citizens use online services

ENERGY

Il Cluster ha l'obiettivo di accrescere la capacità italiana di innovazione sulle Smart Communities e di realizzare progetti e soluzioni applicative per costruire città **SICURE, INTELLIGENTI e INCLUSIVE**



How can we
guarantee to urban
centers
high living standards,
safety and new
services?



**SATELLITE
DATA**



**CITY:
A COMPLEX
ECOSYSTEM**



**SECURITY
CAMERA**



SENSORS



**SOCIAL MEDIA
STREAM**

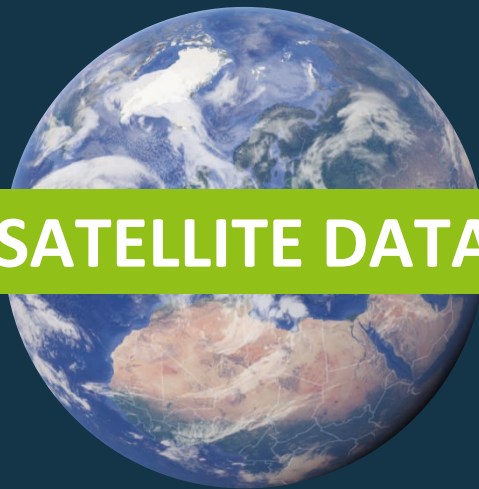


CROWDSENSING

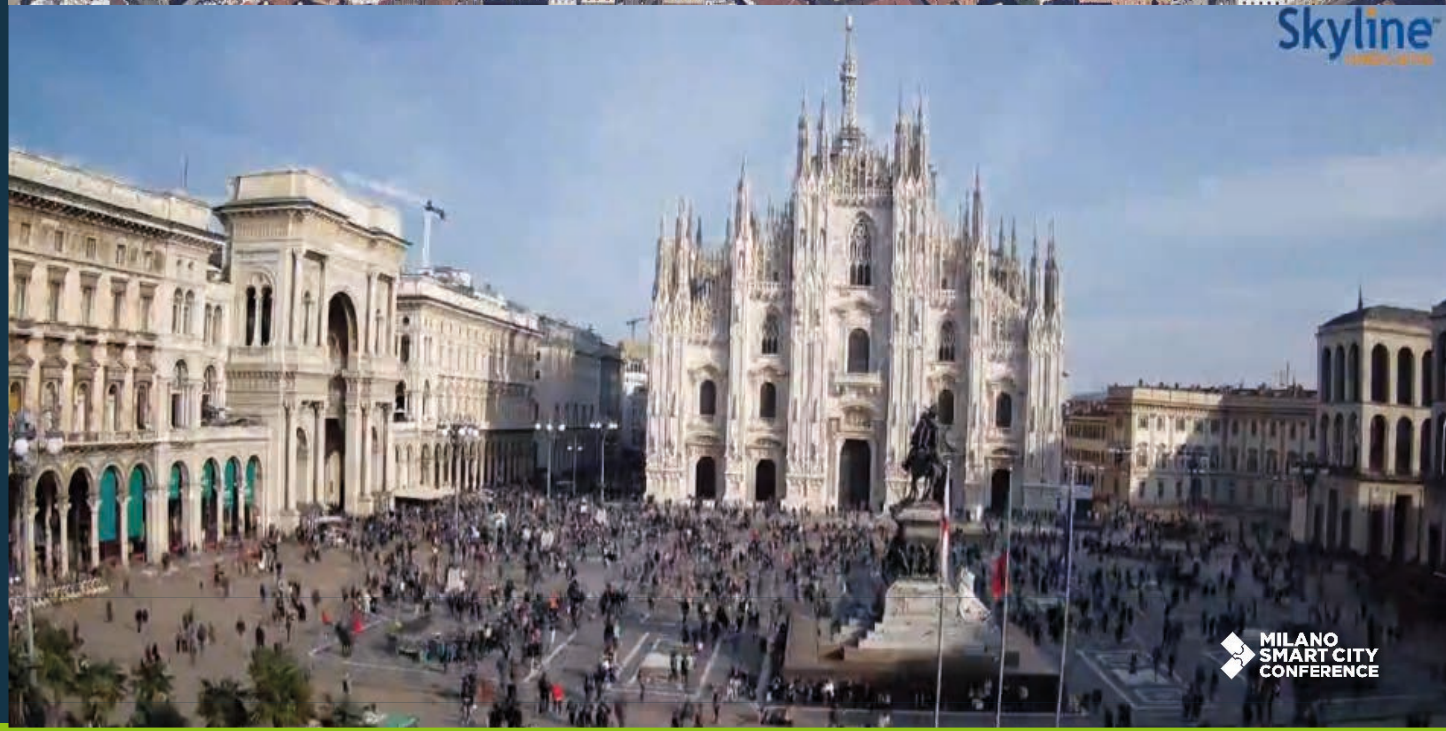




SATELLITE DATA

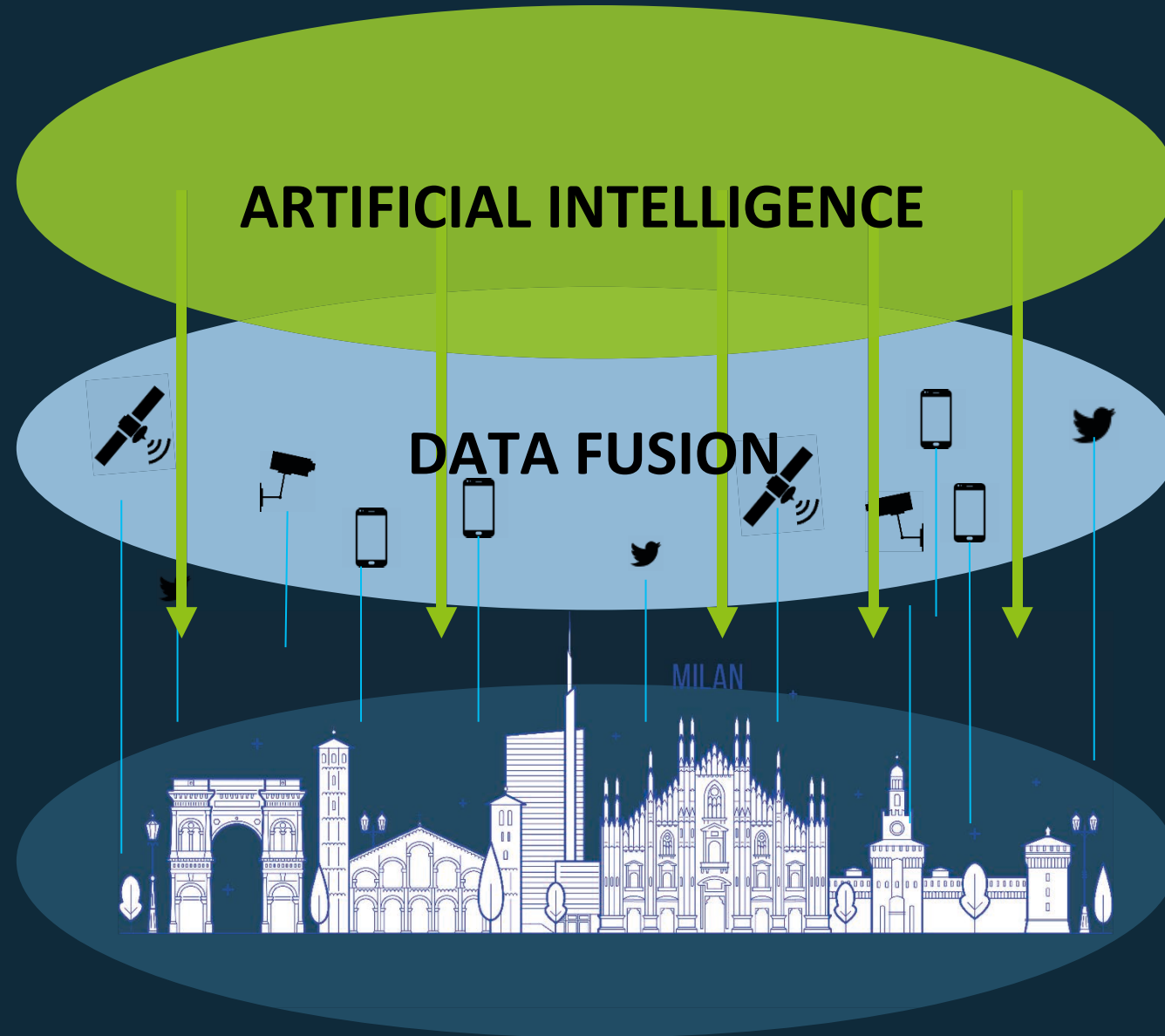


SECURITY CAMERA



HOW

➔ **Unlocking
the value of
data through
AI providing
advanced
services**



SOCIETAL CHALLENGE 7

SECURE SOCIETIES

Protecting Freedom & Security Of Europe & Its Citizens



Fight crime, illegal trafficking
and terrorism

Protect and improve the resilience

Standardization & interoperability

Privacy & freedom



56,6 Mld\$

Lost between 1998-2017
for natural disaster

199.000

Lives lost in a century
+ 2 million people
involved



10Mld€

Damages for
cybercrime in 2016

3,4 Mld€

Savings for Public Security

Up to - 30%

Direct costs for cyber-crime

(3Mld€ In 2017)



Up to - 30%

Damages for disasters

(6Mld€ Last 10 years)



Improving Resilience to Emergencies Through Advanced Cyber Technologies



FUNDED BY THE EUROPEAN COMMISSION.
SECURITY WORK PROGRAMME
(DRS-1-2015)



DATA PRODUCTS



BIG DATA INTEGRATION



TECHNOLOGIES



STAKEHOLDERS



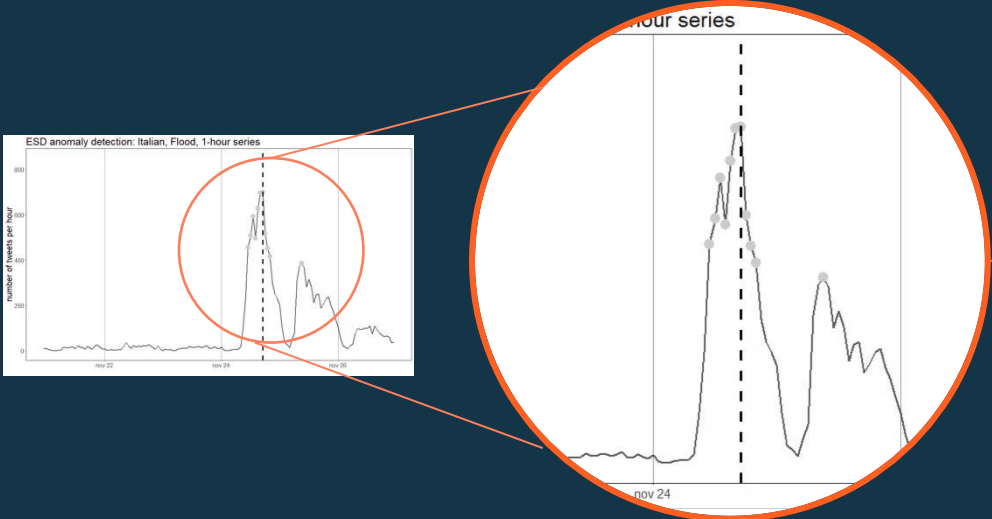
PREVENTION

PREPAREDNESS

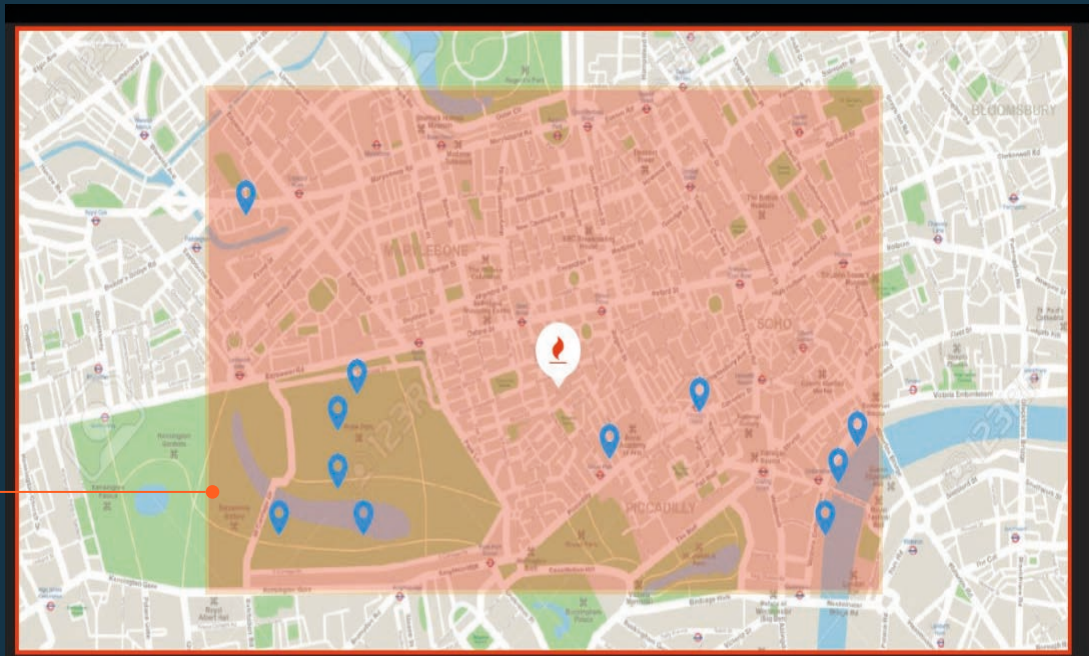
RESPONSE

SOCIAL MEDIA Event Detection


Event Detection on the 1-hour series of Italian tweets concerning Floods, between Nov 21st- 27th 2016. Anomalies appear as large dots. First anomaly is detected on Nov 24th at 11:00 local time. Dotted line marks the Event time according to Copernicus: November 24, 18:00 local time.



Getagged data



Detection

**Fire detection**
source: Twitter stream

5 reports | 30 tweets

NO YES

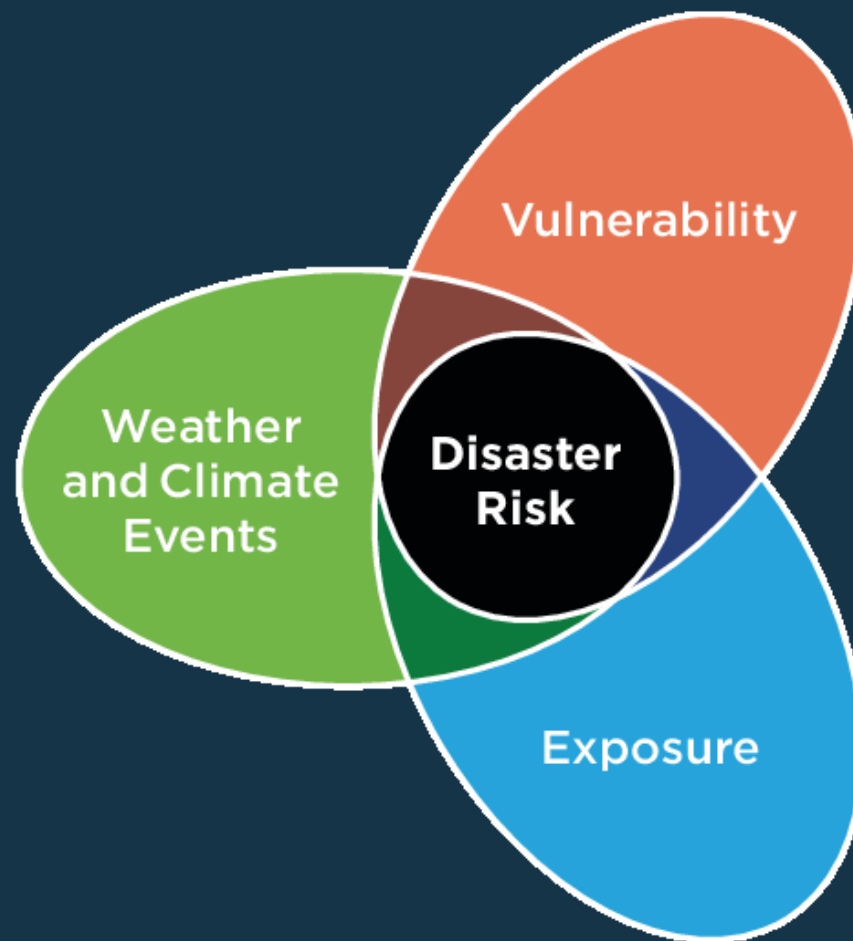
Statistics

Volume	Unique authors	Panic	Informativeness
9,2K	5,9K	50%	80%
+30%	-17%	YES	YES

FROM HAZARD TO RISK

Produce **dynamic risk maps** for **heatwaves, floods, and wildfires** considering

- Hazard
- Exposure
- Vulnerability



HAZARD Fire / Flood



SENSITIVITY

Infrastructures

From Open Street Map



1. Power plant
2. Bridges
3. Airports
4. Schools
5. Wastewater
6. Water supply
7. Pharmacies
8. Hospitals
9. Fire station
10. Police station
11. Telecom tower
12. Heritage Sites (UNESCO)



Protected areas

from NATURA 2000

Natura 2000



Population

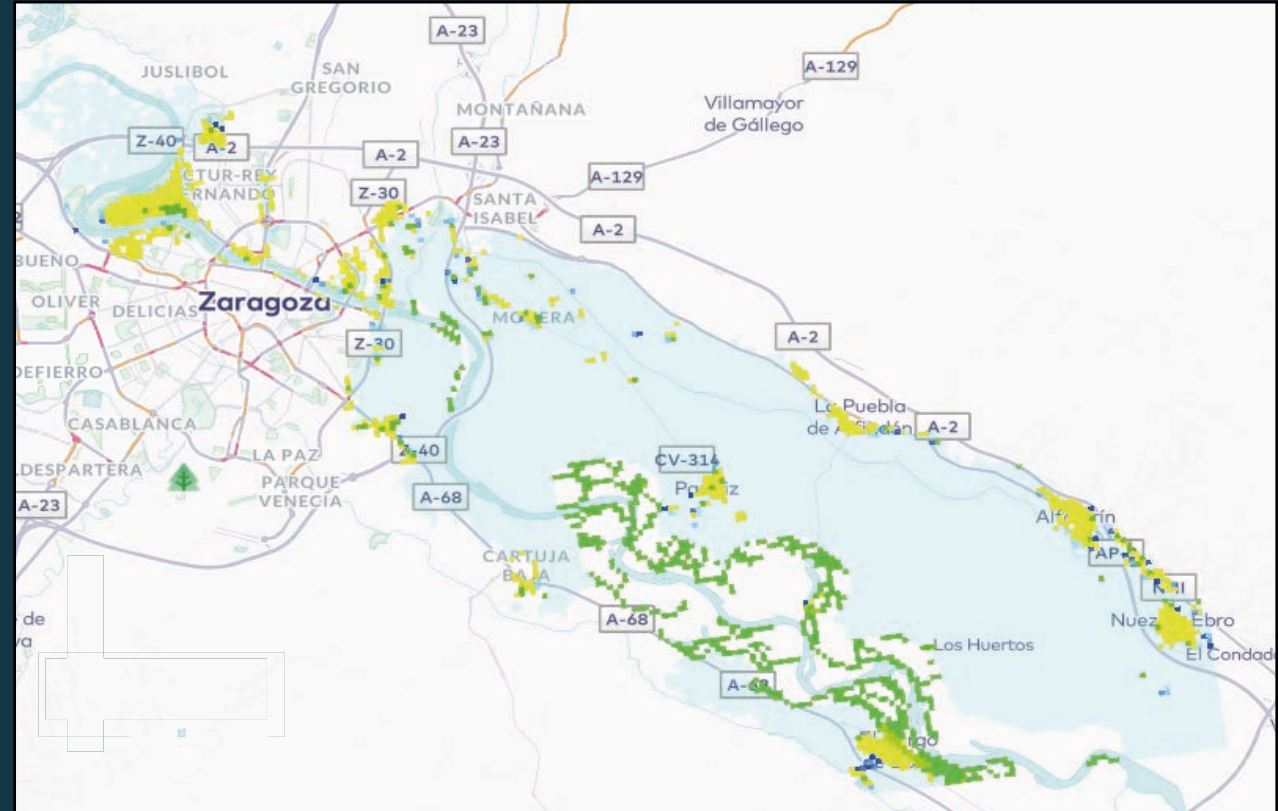
From JRC, 100 m

Total population

1. Under 5 years
2. Over 65



FLOOD RISK MAP



Zaragoza, Spain, 100 m

I REACT FOR CITIZENS



BE INFORMED

- Alerts and warning
- Social stream
- Forecast map layers

INCREASE KNOWLEDGE

- Tips & Quizzes:
Flood / Fire / Extreme weather /
Earthquake / Landslide

ACTIVELY CONTRIBUTE

- By doing reports
- By reviewing other's citizens reports'



CASE STUDY

www.keycrime.com



KeyCrime
INTELLIGENCE SOLUTION

Empower Law
Enforcement agencies
with our technology to
maintain **public order**
and safety in cities across
all countries, globally

2008

MILAN CITY
started using
KeyCrime

2017

- 58%

**DECREASE IN
ROBBERIES**

2017

+ 53%

**INCREASE
SOLVED
CRIMES**



LESSON LEARNED

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graph TD; A[LESSON LEARNED] --> B[POLICY]; A --> C[VALIDATION]; A --> D[ETHICS]; B --> E((Data Interoperability & Frameworks)); C --> F((Crowdsourcing vs Trusted data)); D --> G((Automation vs Bias));
```

POLICY

**Data
Interoperability
&
Frameworks**

VALIDATION

**Crowdsourcing
vs
Trusted data**

ETHICS

**Automation
vs
Bias**

«D'una città non godi le sette o le settantasette meraviglie, ma la risposta che dà a una **tua domanda**»

Italo Calvino

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