



UNIVERSITÀ
DEGLI STUDI
FIRENZE

DINFO
DIPARTIMENTO DI
INGEGNERIA
DELL'INFORMAZIONE

DISIT
DISTRIBUTED SYSTEMS
AND INTERNET
TECHNOLOGIES LAB



EUROPEAN OPEN
SCIENCE CLOUD

DISIT Lab of Univ. Florence

Distributed Systems and Internet Technologies
DiStributed data Intelligence and Technologies

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<https://www.disit.org>, <https://www.Snap4city.org>

See publications on <http://www.disit.org/5487>



Member of CBDAI
Member of PHD-AI Italy

an HPC Infrastructure of UNIFI
Member of CINI SC, BD, CSec

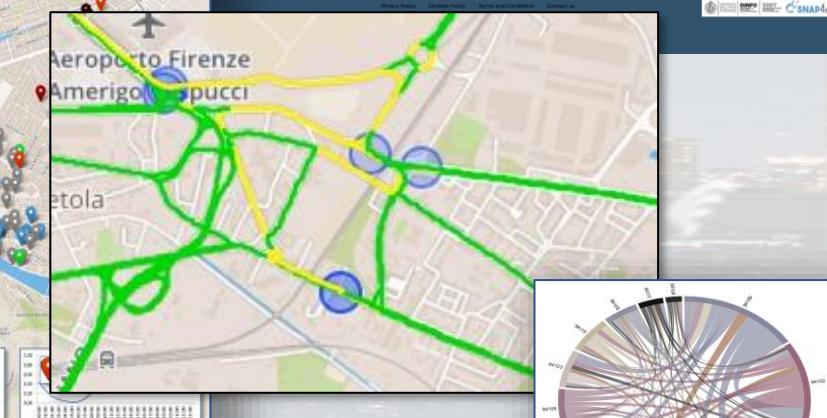
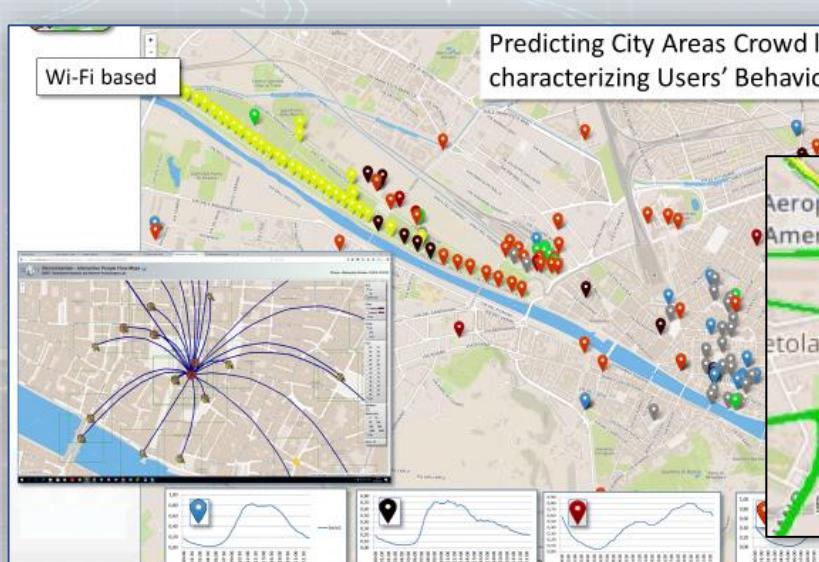
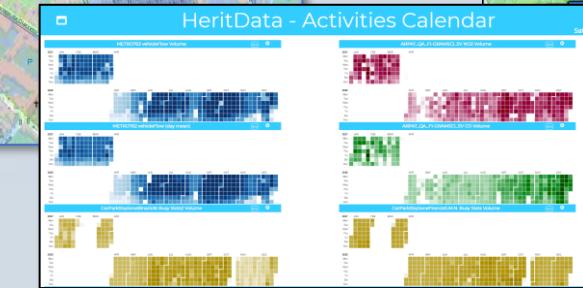
Our Skills Digital Europe Calls



• Data Space Domains

- Smart City, control room
- Green Deal, smart light, ..
- Environment, pollutant, ..
- Mobility and transport
- Tourism and People
- Artificial Intelligence
- Big Data

• Public and private data



Publications <http://www.disit.org/5487>

UNIFI, DISIT lab Overview, December 2021

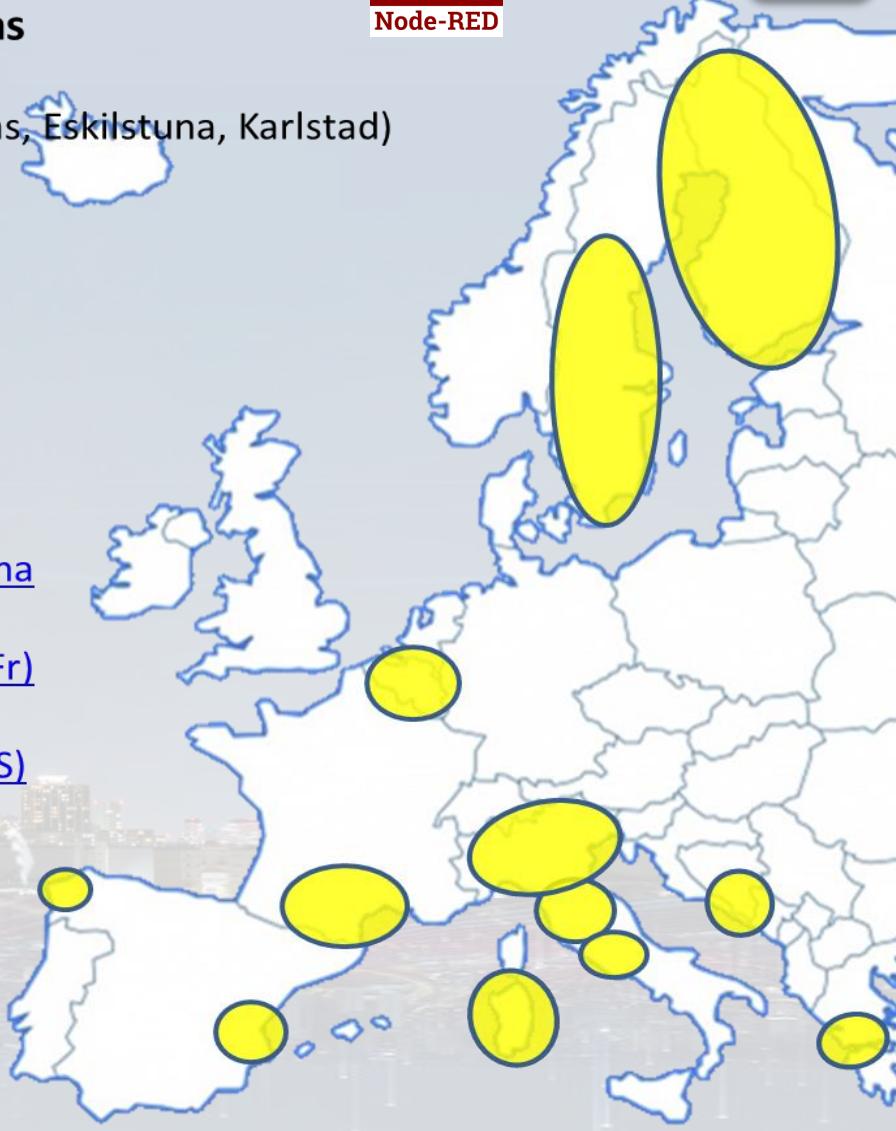


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- 5 running installations
- 13 projects, 12 pilots on 9 Countries
- >40 cities/area
- **Wide MULTitenant deploy, e.g.,**
 - 18 Organizations / tenant
 - > 7000 users on
 - > 1300 Dashboards
 - > 15 mobile Apps
 - **> 2 Million of structured data per day**
 - > 500 IoT Applications/node-RED
 - > 700 web pages with training
 - > 45 videos, training videos



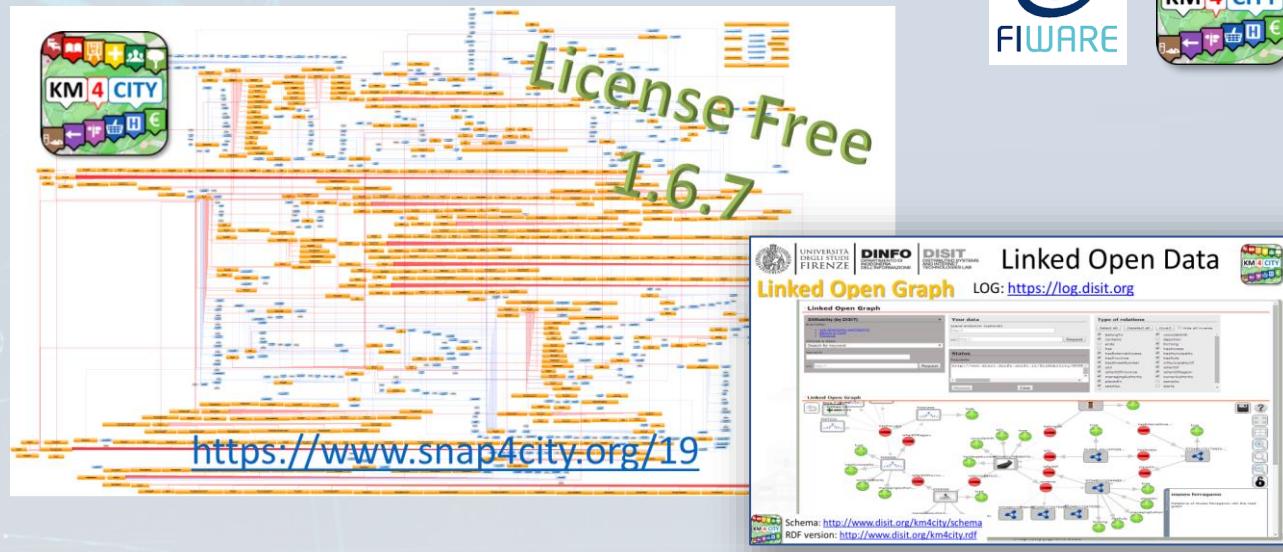
Main Organizations/areas

- [Antwerp area \(Be\)](#)
- Capelon (Sweden: Västerås, Eskilstuna, Karlstad)
- [DISIT demo \(multiple\)](#)
- [Dubrovnik, Croatia](#)
- [Firenze area \(I\)](#)
- [Garda Lake area \(I\)](#)
- [Helsinki area \(Fin\)](#)
- [Livorno area \(I\)](#)
- [Lonato del Garda \(I\)](#)
- [Modena \(I\)](#)
- [Mostar, Bosnia-Herzegovina](#)
- [Pisa area \(I\)](#)
- [Pont du Gard, Occitanie \(Fr\)](#)
- [Roma \(I\)](#)
- [Santiago de Compostela \(S\)](#)
- [Sardegna Region \(I\)](#)
- SmartBed (multiple)
- [Toscana Region \(I\), SM](#)
- [Valencia \(S\)](#)
- [Venezia area \(I\)](#)
- [WestGreece area \(Gr\)](#)
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Data modelling and management

- Semantic Modelling and processing
- IoT Data Models: FIWARE, Snap4City
- Big data management and provider
- GIS data modelling and protocols
- satellite data processing for smart city and industry
- Arch. interoperability, IoT edge, fog and cloud, on premise, ..
- Data interoperability: any format, any protocol, digital twin, 3D



Snap4City ONLINE Development on Cloud/premise

- Data Ingestion, data transformation and Stream
- Data Analytics: Rstudio, Python, MapReduce, TensorFlow, etc..
- Dashboards and Visual Analytic

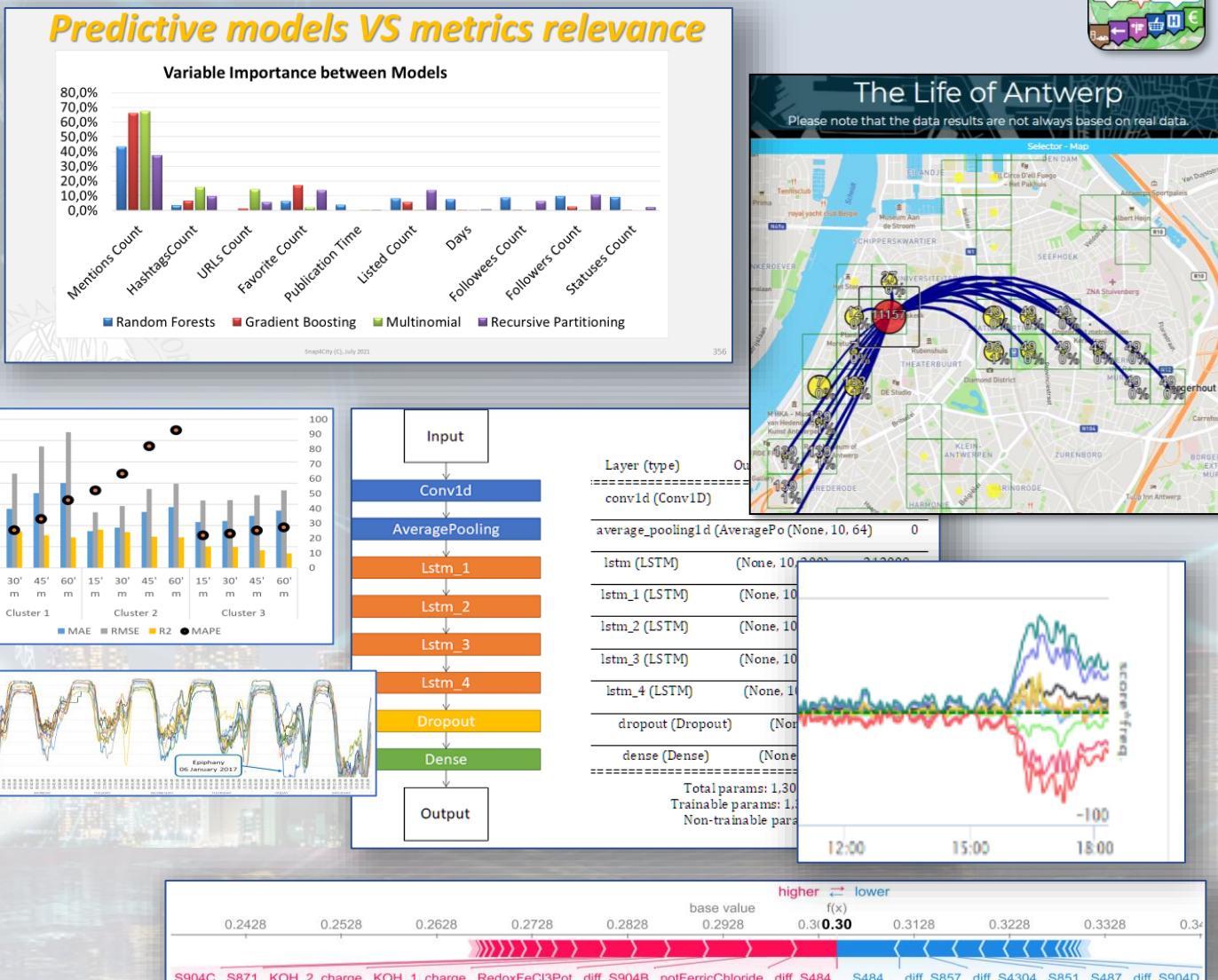
Snap4City Large Data Sets multidomain

- Training and Testing Environment for thousands of users

See pub <http://www.disit.org/5487>

AI, Data Analytic, Visual Analytic

- cognitive reasoning: ontology and reasoners development
- Predictions: pollutants/aerosol, CO₂, NO₂, GHG, traffic, parking, biking, etc.
- +: anomaly detection, clustering, suggestions, simulation, fluid dynamics, decision support systems,..
- NLP: Sentiment Analysis, assistants
- Explained AI, XAI, Trustworthy AI
- Ethics AI, bias, AI certification
- What-if analysis: mixing simulation and AI
- KPI: modelling and computing



<https://www.snap4city.org/download/video/course2020/da/Snap4City-4th-slot-Data-Analytic-v4-6.pdf>

Recent Projects



- **REPLICATE EC H2020 SCC1** Lighthouse project, control room, energy, mobility and ICT <https://replicate-project.eu/>
- **RESOLUTE EC H2020 DR7** project <http://www.resolute-eu.org/> Resilience of Urban transport System, early warning
- **Snap4City PCP of Select4Cities EC H2020**, which has generated the Snap4City platform <https://www.snap4city.org> , environment, human behaviour, mobility, and tourism
- **Herit-Data** Interreg <https://herit-data.interreg-med.eu/> multiple pilots in Europe, tourism, human behavior, environment
- **MOBIMART** Interreg <http://interreg-maritime.eu/web/mobimart/home> --> Snap4Pisa
- **TRAFAIR CEF** <https://trafair.eu/> for the implementation of predictive models for environmental data, NOX
- **MOSAIC RT**, smart mobility solutions: (i) matching offer of transportation and demand of mobility; (ii) connected drive solutions;
- ...Sii-Mobility, Weeee, ICARO, 5G, Etc...



DISIT recognitions

- **Snap4City Smart City Control Room in Florence Metro City**
- **Snap4City**
 - FIWARE Solution, platform:
 - FIWARE Training and Consultancy Services:
 - FIWARE Certified Experts
- **Snap4City EOSC, European Open Science Cloud**
- **Snap4City Node-RED Library on Smart City**
- **Twitter Vigilance, social media**
- **LD and ontologies tools LOD, Linked Open Graph:**
<https://log.disit.org/service/>



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Calls of Interest

- First Call Preparatory actions:
 - Data Space for Smart Communities
 - Data Space for Ai-on-demand Platform
 - Data Space for Mobility
 - Data Space for Tourism
 - Data Space for Green Deal
- Second and third Calls
 - In corresponding areas



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