

* The Human Digital Twin, modelling all relevant aspects (skills, body fatigue, etc.) of humans that are part of a Smart Environment, to allow a true human-in-the-loop approach for Digital Twins.

- Cyber-Physical Social Systems and Systems theory
- Personalised recommender systems (graph and semantic -based)
- User Modelling
- Knowledge modelling and formalisation (Ontologies, Knowledge graphs)
- Knowledge Representation and reasoning
- Knowledge discovery, revision, evolution, fusion
- Natural Language Processing for Knowledge Management

- How to design computer systems that are able to adapt to users and context, taking into account the dynamics and complexity of multi-user environments and heterogeneous knowledge sources?
- How to handle systems impacted by the behaviour of individuals, balancing the interests of the individuals and the system?
- What model for a human digital twin to implement the human-in-the-loop paradigm in smart environments?
- How to manage knowledge graphs and knowledge-based reasoning in dynamic and distributed systems?
- How to bring cognition capabilities to IoT objects in complex cyber-physical-social spaces, supported by hybrid cloud/II infrastructures, to ensure natural interaction with humans?
- How can Multi-Agent Systems Knowledge-based Reasoning support cognition and collaborative intelligence in Cyber-Physical and Social systems?

- Health Techs
- Industry 4.0/5.0
- Education Technologies
- Digital Twin
- ICT
- RegTechs

Cognitive IoT Intelligent Agents for IIOT, LIST, 2020, Coordinator Cognitive IoT, Human Digital Twin, Agent platforms for IIoT and Digital Twin, Human-Cognitive Thin Interaction

Maisa (Maintenance of Semantic Annotations 2), FNR PCP, 2020, Coordinator) – Ontology evolution

LILA (LILes Data Flow and Nubius Annotations), AAL Programme, 2M+, 2020-2020, Coordinator) - Personalised meal recommendations, food knowledge graph, automated recipe planning with Wikifood tools (<https://www.lila-project.eu/>)

CrossKiln (Empowering new digital cultural heritage in context-aware crossroads of European History), Horizon 2020, 3.7MEU, 2016-2019, Coordinator) - Personalised crowd systems, smart guiding, Knowledge-Based Recommender Systems, Micro-services Cloud Platform

LIFE ARACHNID (EU Life Programme). See also lila-project.eu

Life Evolution of Artificial Intelligence, FNR COR CORIS, 2018-2020, Coordinator) - Semantic interoperability, Semantic Web, Ontology evolution, semantic annotation, medical informatics

Goliath (GSA Enabled Layered system for Interoperable Activities of Digital Twins), 2016-2016, 211XK€, FNR-INTER POL, Coordinator) - Context-awareness, Intelligent IoT, Smart Home, Multi-Agent Systems

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