

# PhD Curricula - Blockchain and Distributed Ledger Technology

## Curriculum 6: Industry 4.0

Industry 4.0 includes a new business vision that triggers innovation and adds value into the business by means of the integration of new pervasive ICT technologies (IoT, cloud and edge computing, AI and Machine / Deep learning) into services, products and production plants in order to provide the industrial production system with greater automation and responsiveness, efficiency, automatic optimization of process improvements etc. An important issue for a pervasive usage of Industrial Internet of Things (IIoT) entails accountability requirements for them that can be dealt with using blockchain technologies.

The curriculum on Blockchain and Industry 4.0 focuses on blockchain research for Industry 4.0 applications and covers both application and theoretical aspects. Research issues cover, but are not limited to digital user identity and accountability across business units and consortiums, scalability, interoperability and trust in blockchain systems for IIoT, transparency, information sharing, and privacy control in the next-generation of Blockchain Technology for smart applications.

The curriculum is aimed at training blockchain experts capable of guiding the integration process of Blockchain in innovative scenarios of Industry 4.0. To this end, a direct involvement of organizations playing a major role in this topic is envisioned.

### Keywords:

- Technology integration in Industry
- Internet of Things
- Machine learning
- Consensus protocol
- Distributed ledger security
- Blockchain security
- Accountability
- Services, products and supply chain
- Business organization