The EU SimpliCITY project attempts to raise the usage of smart city services (e.g. bike mobility, local consumption, social inclusion) by encouraging both physical and digital participation using incentivization methods and tools, including Distributed Ledger Technology (DLT) such as Blockchain. The goal is to motivate citizens to use smart regional sustainability services and empower them to change their mobility, consumption or social integration patterns.

EU project web site: https://www.simplicity-project.eu/en/projectdescription/

We offer two master thesis projects on the following topics, related to Distributed Ledger Technology (DLT). One form of DLT implementation is the blockchain system. DLT is a consensus of replicated, shared, and synchronized digital data geographically spread across multiple sites, countries, or institutions. No central administrator or centralized data storage is needed with this technology. However, a peer-to-peer network and consensus algorithms are required to ensure replication across nodes is undertaken.

(1) “Distributed ledger technology (DLT) compatibility with GDPR”
This project will study the compatibility problem between Distributed ledger technology (DLT) and General Data Protection Regulation (GDPR). GDPR is a new data privacy regulation imposed by the EU. There are several good reasons to study whether GDPR and blockchain are compatible with each other. For example, one of the key components of GDPR is the right to be forgotten. Meanwhile, Blockchain, by contrast, is designed to be immutable – meaning data can be added to a network, but not deleted. The tasks in this project will include background study on DLT and GDPR, identifying potential compatibility problems between DLT and GDPR, and exploring possible solutions to resolve these problems.

(2) “Blockchain based innovation reward system”
This project aims to explore reward systems based on Blockchain or Distributed Leger Technology (DLT) in general. Many smart city services require participation of citizens in order to be successful (e.g. reducing energy consumption, taking more public transportation). Reward system can give incentives (or rewards) to the citizens and bring the community together to participate in the campaigns for building a sustainable city. Blockchain technology offers advantages in the implementation of the reward system, which can reduce costs, draw in more participants and to provide flexible and faster redemption for members. In this project, we will conduct background study on existing reward systems based on blockchain or DLT, design and implement a reward system for smart city services together with our partner company Polycular. [Web site of Polycular: https://www.polycular.com]

If you are interested or have any questions, please email to Dr. Edith Ngai <edith.ngai(AT)it.uu.se>. Please indicate your interest on which topic.

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