Blockchain-based Platform For Shared Mobility Services

Modules:

o   Wirtschaftsinformatik
o   Human Computer Interaction
o   Bachelor & Master
o   Any type of project or thesis

Contact:

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Topic:

Shared mobility is an emerging, environmental-friendly alternative to individual transport and could be one of the driving forces behind the urgently required mobility transformation. The main idea is that individuals no longer own their personal vehicles, but instead have on-demand access to cars, bicycles, scooters or rides from shared mobility providers.

Rural areas are mostly dominated by private transport and a personal car is usually unavoidable. In most places, public transport is usually less well developed and often even further reduced for cost reasons. Here, shared mobility services could increase the mobility of people, but currently are rare and, if existent, isolated from one and another. One of the main reasons is that shared mobility providers, for economic reasons, follow a top-down approach where they reduce their offerings with decreasing population density. At the same time installation hurdles for non-profit-seeking providers are large, especially regarding the technical infrastructure required to operate such a service.

To address the before-mentioned challenges of shared mobility in rural areas, as well as to facilitate and support the adoption and provision of more services, we are currently developing an open, blockchain-based platform that enables peers to share vehicles in rural areas.

Related tasks are:

•   design of blockchain-based services
•   development of smart contracts for Ethereum
   ➢ we expect programming skills but not necessarily in Solidity
•   programming of microcontrollers and their connection to the blockchain.

Literature:

o   3Blue1Brown: But how does bitcoin actually work? (https://www.youtube.com/watch?v=bBC-nXj3Ng4)
o   Nakamoto, S. (2019). Bitcoin: A peer-to-peer electronic cash system. Manubot.
o   Shaheen, S., Cohenand, A., & Zohdy, I. (2016). Shared mobility: current practices and guiding principles.
o   Wüst, K.: and Gervais, A.: Do you need a Blockchain? 2018. Do you need a Blockchain? 2018 Crypto Valley Conference on Blockchain Technology (CVCBT) (2018), 45–54.

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