

## **Confidentiality preserving data exchanges**

Recent technological advances digital infrastructures are rapidly enhancing data availability. Specifically, sensors that provide state awareness and product usage data, oracles that provide data analytics services, and decentralized compute frameworks that coordinate and enable data exchanges, hold great promise to automate and enhance decision making based on data.

Early examples, like ETHERISC (<https://etherisc.com/>), demonstrate some possibilities with distributed sensors, data analytics, and decentralized data exchange platforms. However, the lack of privacy preserving and confidentiality preserving mechanisms for data analytics and data exchanges means that most use cases rely on public or otherwise non-confidential data.

To extend the benefits of the aforementioned advances in digital infrastructures beyond non-confidential data, we need to develop privacy preserving and confidentiality preserving solutions for data analytics, data exchanges, and the exchange of data derived insights.

The proposed project seeks to explore the application of privacy preserving and/or confidentiality technologies in a commercial context. Suitable contexts include, but are not limited to, insurance, supply chain management, automotive, healthcare, and smart homes. Some of these contexts represent an opportunity for developing solutions proposals where an individual is in control over their own data and the monetization thereof. Other contexts, e.g., supply chain management, represent opportunities for major improvements in efficiency and resource productivity if confidentiality preserving data exchanges are made possible.

The students are expected to design a solution proposal for their chosen context, develop a demonstratable proof of concept using readily available frameworks and platforms (such as Ethereum or one of the Hyperledger project's platforms), and discuss the commercial and competitive implications of their design choices.

For more information, contact Peter Altmann, PhD, at the Swedish Research Institute, RISE

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