

**Company:** De Nederlandsche Bank

**Supervisor(s) at company (name + e-mail addresses):**

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**University:**

**Supervisor(s) at university (name + e-mail addresses):**

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**Project title (or topic):**

Trusted data feeds for smart contracts executing on a blockchain

**Short project description:**

De Nederlandsche Bank (the central bank of the Netherlands) is interested in providing trusted data to facilitate the development of decentralized applications for the financial market. This project will investigate how oracles can be used to facilitate such data feeds.

**Technical assignment:**

Smart contracts executing on a blockchain cannot access external data sources. Instead, external parties must call smart contract methods, providing the data as arguments. The challenge is to trust the authenticity and integrity of these external parties. An oracle is such a trusted service that writes data to a blockchain to be used by smart contracts. It provides means to verify the authenticity of the data and that the claimed interaction with the smart contract took place.

This project will investigate different approaches for verifying the authenticity and integrity of data from external data sources, and their impact on the performance and execution cost of smart contracts. The work will result in a proof-of-concept for an oracle publishing data feeds that are relevant for the company, targeting a public and/or a permissioned blockchain.

The work will be conducted partly at the university and partly at De Nederlandsche Bank in Amsterdam.