



Open Position: **Research Associate (PhD Student)**

Topic: **Blockchain Analytics of UTXO-based Blockchains**

Starting date: **Upon common agreement** (preferably, 2022 early Q3)

Duration: Up to three years (yearly renewal)

Responsibilities

Develop and manage research projects with a focus on the creation of an efficient, versatile, data collection, develop approaches for processing UTXO and e-UTXO blockchains. The core use of the platform is the transformation of binary data from UTXO blockchains (with a focus on Cardano, but applicable also to Bitcoin, Litecoin, etc.) into readable database structures of multiple types (e.g., SQL, and Graph databases) for (in-memory) analysis, with a modular design enhancing versatility for use on multiple blockchains and future extensions.

The candidate should be able to conduct and complete highly innovative research. He/she will be working in collaboration with the Blockchain Data Observatory at the University of Zurich and Cardano Foundation, which will provide unique insight into its inner workings. The candidate is expected to develop methods and consolidate different open-source tools to enable seamless data collection, streaming, conversion, and analytics. Moreover, the tools shall be extended to fulfill the per-blockchain requirements. The data collected will be used by the candidate to apply Network-science-based analytics on the blockchain assets and accounts to extract in-depth insights of the studied blockchains.

The appointed candidate will support teaching activities of the Blockchain and Distributed Ledger Technologies group and mentor Bachelor and Master students in topics in her/his area of competence.

Qualifications

The candidate should have an excellent degree (MA/MSc/diploma) in computer science, computer engineering, or related disciplines, with strong programming, data management, and data science background, with studies on some of the following topics: big data, data management systems, parallel and high-performance computing, cryptographic protocols, blockchain and distributed systems.

Other requirements are (i) Excellent command of Python, Haskell and Java or equivalent for data analysis, database access and storage; (ii) Very good command of English (oral and written) and excellent communication skills. Our group prioritises developing exciting new research and creating real-world applications in cooperation with organisations. Candidates who demonstrate a track record of completing high-quality and innovative research will be privileged. Curiosity and discipline, self-reliance, integrity, and creativity are mandatory attributes.

The Blockchain and Distributed Ledger Technologies Group +

The group is at the core of the UZH Blockchain Center, focusing on an interdisciplinary approach to Blockchain and DLT systems. We stand that these systems are paramount examples of complex socio-economic and socio-technical systems. The large-scale properties they evince (consensus at the technical level, trust at the social level, wealth, and power accumulation at the economic level) are non-trivial properties that can only be understood by comprehending the link between micro-level behaviour of the multiple, heterogeneous agents that compose them, and their continuous interactions and rules



they must abide. To achieve these goals, we perform large-scale data analysis, minimalistic modelling aimed at uncovering mechanisms behind regularities observed.

The core research lines of the group include: Blockchain Analytics, Cryptoeconomics and Incentive Design, Consensus Modelling and Analysis. We do so by following complex systems approaches which allow us to understand the mechanisms that drive the emergence of large-scale properties in the systems under study. As such, we are a leading research groups for interdisciplinary approaches to the field, with multiple collaborations with leading platforms in the space.

UZH Blockchain Center ([📍](#) [in](#)) is a World-wide renowned Competence Centre with an interdisciplinary approach to blockchain research, education, and outreach. In 2021, it was 4th World-Wide (and 1st in Europe) University for Blockchain. Its proximity to Crypto Valley and the range of blockchain activities in Switzerland make it a unique location to pursue a PhD in this space.

Offer

- A leading team in the space with a strong emphasis on interdisciplinary and applied blockchain research.
- The opportunity to complete a Ph.D. in the Blockchain domain (title: PhD in Computer Science)
- The opportunity to work at the frontier of a disruptive interdisciplinary research field.
- A broad-range, independent work as part of a dynamic team in a positive working atmosphere.
- A thorough career development programme (management by objectives, participation in summer schools, conferences, etc.).
- A well-equipped workspace in an excellent university with an international reputation.
- A competitive salary.
- A good work-life balance.

How to apply

Further enquires can be sent to Prof. Dr Claudio J. Tessone ([📍](#) [🎓](#) [in](#)) and BDLT administration (addresses below). To be considered, applications must be sent by email, enclosing the following:

- i. Current CV
- ii. University degrees
- iii. Statement of interests and ideas (one page, max),
- iv. Name and contact details of two referees.

Address your correspondence with subject “[Application] BDLT - PhD - Blockchain Analytics” to the two addresses below before 1st June 2022:

- Prof. Dr Claudio J. Tessone <claudio.tessone@uzh.ch>
- Samantha O’Farrell/Denise Gloor <bdlt.admin@ifi.uzh.ch>