**Brno University of Technology**
Faculty of Information Technology

Department of Intelligent Systems (DITS) Academic year 2021/2022

# Bachelor's Thesis Specification


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| Student: | **Žiška Marek** |
| Programme: | Information Technology |
| Title: | **Biometric System Security Using Blockchain Technology** |
| Category: | Security |

Assignment:

1. Get familiar with principles of decentralized systems and systems which are commonly used for biometric security and biometric data storage.
2. Identify weak points of traditional biometric systems and propose a variant of a decentralized biometric system based on blockchain technology.
3. Implement the proposed system and demonstrate his behavior and communication.
4. Evaluate results against traditional biometric systems. Discuss the advantages and disadvantages of such a system as well as possible extensions. Identify primary security threats.

Recommended literature:

- Cachin, C., & Vukolić, M. (2017). Blockchain consensus protocols in the wild. arXiv preprint arXiv:1707.01873.
- Narayanan, A., Bonneau, J., Felten, E., Miller, A., & Goldfeder, S. (2016). Bitcoin and cryptocurrency technologies: a comprehensive introduction. Princeton University Press.

Detailed formal requirements can be found at https://www.fit.vut.cz/study/theses/

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| Supervisor: | **Malaník Petr, Ing.** |
| Consultant: | Januš Filip, Ing., UITS FIT VUT |
| Head of Department: | Hanáček Petr, doc. Dr. Ing. |
| Beginning of work: | November 1, 2021 |
| Submission deadline: | July 29, 2022 |
| Approval date: | November 3, 2021 |