Fiche Technique

Préparer une fiche de compétences pour en vue d’intégrer un consortium européen

**Vous trouverez ci-dessous une proposition de structure pour vous aider à préparer une fiche de présentation et/ou d’offre de compétences, EN ANGLAIS, qui servira à la fois pour la veille et pour poster sur les plateformes de recherche de partenaires dans le cadre d’appels à projets européens, ou lors de « brokerage events » (événements de recherche de partenaires).**

**Merci d’indiquer**

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| **Référence des Topics/AAP ciblés (si identifiés) :**  HORIZON-CL3-2024-FCT-01-08-Tracing of cryptocurrencies transactions related to criminal purposes |

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| **Domaines d’applications de vos recherches (à compléter en anglais) :**  **Blockchain Data Analysis, Bitcoin Analysis, User deanonymization, User Fingerpriting, Graph Reprsentation Learning.** |

**Présentation Générale, résumant les activités principales de l’équipe ou du labo (1 page max. en anglais) :**

**Contact : Rémy Cazabet, Assoc. Prof. (Maître de Conférences), Lyon 1 University, Lyon, France**

The DM2L team (Data Mining and Machine Learning) or LIRIS Laboratory, and in particular Assoc. Prof. Rémy Cazabet, has a strong expertise in cryptocurrency analysis, in particular using graphs approaches. They have notably been leader of the French National Research Agency (ANR) project BITUNAM (Bitcoin User Network Analysis and Mining), whose objective was to better understand the activity of users in the Bitcoin blockchain using data mining and machine learning techniques on the blockchain data. They have notable experience in user deanonymization, using unsupervised[1] and supervised[2] methods. They have proposed methods based on Graph representation learning to propose user fingerprinting[3,4], allowing the matching of multiple accounts of the same entity not based on direct exchanges between these entities but based on indirect information, i.e., the patterns of the money flow in the transaction network. They have also used this type of information to better understand the nature of exchanges in Bitcoin [4].

[1] Remy, Cazabet, Baccour Rym, and Latapy Matthieu. "Tracking bitcoin users activity using community detection on a network of weak signals." *Complex Networks & Their Applications VI: Proceedings of Complex Networks 2017 (The Sixth International Conference on Complex Networks and Their Applications)*. Springer International Publishing, 2018.

[2] Tubino, Rafael Ramos, Céline Robardet, and Rémy Cazabet. "Towards a better identification of Bitcoin actors by supervised learning." *Data & Knowledge Engineering* 142 (2022): 102094.

[3] Tovanich, N., & Cazabet, R. (2023). Fingerprinting Bitcoin entities using money flow representation learning. *Applied Network Science*, *8*(1), 63.

[4] Tovanich, N., & Cazabet, R. (2022, November). Pattern Analysis of Money Flows in the Bitcoin Blockchain. In *International Conference on Complex Networks and Their Applications* (pp. 443-455). Cham: Springer International Publishing.

[5] Rafael Ramos Tubino, Rémy Cazabet, Natkamon Tovanich & Céline Robardet (2023). « Temporal and Geographical Analysis of Real Economic Activities in the Bitcoin Blockchain ». LIMBO@ECML/PKDD 2023: International workshop on LearnIng and Mining for BlOckchains, 18 septembre 2023, Turin (Italie).

**Présentation résumée : offre de compétences de 500 caractères en anglais (incluant l’adresse mail à laquelle vous contacter) destinée à apparaître en ligne sur le site de la Commission européenne, sous chaque AAP pertinent**

Contact: remy.cazabet@univ-lyon1.fr . The Data Mining and Machine Learning team of LIRIS Lab. (Lyon, France) has a strong expertise in cryptocurrency analysis, in particular using graph mining. From their leadership in the ANR BITUNAM research project, they have experience in user deanonymization, using unsupervised and supervised methods. They have also published methods based on Graph representation learning for user fingerprinting, leveraging money flow in the Bitcoin exchange network.