

2. Unraveling Complex Networks: Graph Embedding and Neural Networks for Social and Cryptocurrency Analysis

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Embark on a transformative research journey in the realm of network analysis with our cutting-edge project focusing on graph embedding and graph neural networks. We invite passionate students to join us in exploring the multifaceted applications of these techniques in social networks and cryptocurrency ecosystems (See: [Béres, Ferenc, et al. "Vaccine skepticism detection by network embedding." arXiv preprint arXiv:2110.13619 (2021).] [Béres, Ferenc, et al. "Blockchain is watching you: Profiling and deanonymizing Ethereum users." 2021 IEEE international conference on decentralized applications and infrastructures (DAPPS). IEEE, 2021.].



In this project, we transcend traditional boundaries by integrating both content and structure within networks. By combining elements such as tweet text, user metadata, and transaction descriptors, we create dynamic, information-rich graphs that capture the essence of complex interactions. Our focus extends beyond conventional analysis methods, delving into node embedding and community detection models specifically designed to scale seamlessly for graphs with millions of edges.

The collaborative and dynamic nature of this project ensures that participants gain hands-on experience in handling large-scale data, implementing state-of-the-art models, and drawing meaningful insights from intricate networks.

If you are a student fascinated by the convergence of artificial intelligence, network analysis, and real-world applications, this research abroad program offers a platform to make significant contributions to the field. Join us in unraveling the complexities of social and cryptocurrency networks through innovative graph embedding and neural network approaches, and become an integral part of pioneering research that pushes the boundaries of what is possible in network analysis.