FERENC BÉRES, PHD

PERSONAL INFORMATION

Born 1991.10.16., Eger, Hungary
E-mail beres.ferenc@sztaki.hun-ren.hu
Phone +36 1 279 6000 / 7377

EDUCATION

Eötvös Loránd University September 2016 - February 2023
Ph.D. in Informatics

Advisor: András Benczúr, PhD
Thesis: Mining social and cryptocurrency networks

Eötvös Loránd University September 2013 - June 2015
M.Sc. in Applied Mathematics

Advisor: András Benczúr, PhD
Thesis: Centrality on dynamic graphs

Eötvös Loránd University September 2010 - June 2013
B.Sc. in Mathematics

Advisor: István Sigray
Thesis: Solving a polynomial differential equation with iteration (Hungarian)

Eötvös József Gimnázium, Budapest September 2006 - June 2010
Grammar school

WORKING EXPERIENCE

HUN-REN Institute for Computer Science and Control April 2014 - Present
Research Associate *Budapest*

Research on social and cryptocurrency networks [1, 4, 7, 8, 12, 13, 14, 15, 16]
Machine Learning projects with industry partners (OTP, MAVIR, KSH)
Team member on the ACM International RecSys Challenge 2018 [11] Prize: 9
Team member on the ACM International Web Search and Data Mining Challenge 2019 [10] Prize: 10
Organizer of the ECML/PKDD International Data mining Challenge 2016
Teaching data science courses to companies (OTP, Bosch) 2016-2018
Supervising 10+ MSc, BSc thesises over the years

PR-AUDIT Ltd. 2013
Trainee in IT Security *Budapest*

PRESENTATIONS

71st Wandering Assembly Conference and Exhibition: (2025 Sept - TBC) Szeged, HU
Evolution of data-driven solutions in energy: from traditional ML to explainable deep learning

AI in Energy: Artifical Intelligence National Laboratory (MILAB) Meetup:
Model Building for Energy-Specific Tasks Based on Data (2025) Budapest, HU

10th International Conference on Complex Networks and their Applications (2021) [9] Online

IEEE International Conference on Decentralized Applications and Infrastructures (2021) [8] Online

ACM International Conference on Distributed and Event-based Systems (2021) [6] Online

Cryptoeconomic Systems (CES) (2020) [7] MIT Campus, Cambridge MA, USA

7th International Conference on Complex Networks and Their Applications (2018) [5] Cambridge, UK

14th MLP workshop held in conjunction with 24th ACM SIGKDD, London (2018) [2] London, UK

6th International Conference on Complex Networks and Their Applications (2017) [3] Lyon, France

SKILLS

Spoken languages: Hungarian (mother tongue), English (fluent), French (basic)

Language exams: English B2, French B1

Programming languages: Python, Java, Bash

Softwares: Pytorch, Jupyter, Scikit-learn, Scipy, Git, LaTeX

Operating systems: Linux, Windows

RESEARCH INTERESTS

Data mining, Machine learning, Network science

Temporal networks, Graph representation learning

PUBLICATIONS

[1] Ferenc Béres, Róbert Pálovics, Anna Oláh, and András A Benczúr. Temporal walk based centrality metric for graph streams. *Applied Network Science*, 3(32):26, 2018.

[2] Ferenc Béres, Róbert Pálovics, and András A. Benczúr. Temporal walk based centrality metric for graph streams. In *14th International Workshop on Mining and Learning with Graphs, held in conjunction with KDD'18*, 2018.

[3] Ferenc Béres and András A. Benczúr. Online centrality in temporally evolving networks. In *Book of Abstracts of the 6th International Conference on Complex Networks and Their Applications*, pages 184–186, 2017.

[4] Ferenc Béres, Domokos M. Kelen, Róbert Pálovics, and András A Benczúr. Node embeddings in dynamic graphs. *Applied Network Science*, 4(64):25, 2019.

[5] Ferenc Béres, Róbert Pálovics, Domokos M. Kelen, Dávid Szabó, and András A. Benczúr. Node embeddings in dynamic graphs. In *Book of Abstracts of the 7th International Conference on Complex Networks and Their Applications*, pages 178–180, 2018.

[6] András Benczúr, Ferenc Béres, Domokos Kelen, and Róbert Pálovics. Tutorial on graph stream analytics. DEBS '21, page 168–171, New York, NY, USA, 2021. Association for Computing Machinery.

[7] Ferenc Béres, István András Seres, and András A Benczúr. A cryptoeconomic traffic analysis of bitcoin's lightning network. *Cryptoeconomic Systems*, 1(1), 2021.

[8] Ferenc Béres, István András Seres, András A Benczúr, and Mikerah Quintyne-Collins. Blockchain is watching you: Profiling and deanonymizing ethereum users. In *2021 IEEE International Conference on Decentralized Applications and Infrastructures (DAPPS)*, pages 69–78, 2021.

[9] Ferenc Béres, Rita Csoma, Tamás Vilmos Michaletzky, and András A. Benczúr. Vaccine skepticism detection by network embedding. In *Book of Abstracts of the 10th International Conference on Complex Networks and Their Applications*, pages 241–243, 2021.

[10] Ferenc Béres, Domokos M Kelen, and András A Benczúr. Sequential skip prediction using deep learning and ensembles. 2019.

[11] Domokos M Kelen, Dániel Berecz, Ferenc Béres, and András A Benczúr. Efficient k-NN for playlist continuation. In *Proceedings of the ACM Recommender Systems Challenge 2018*, page 6. ACM, 2018.

[12] Benedek Rozemberczki, Paul Scherer, Yixuan He, George Panagopoulos, Alexander Riedel, Maria Astefanoaei, Oliver Kiss, Ferenc Béres, Guzmán López, Nicolas Collignon, and Rik Sarkar. Pytorch geometric temporal: Spatiotemporal signal processing with neural machine learning models. CIKM '21, page 4564–4573, New York, NY, USA, 2021. Association for Computing Machinery.

[13] Ferenc Béres, Gábor Lukács, András J. Molnár, and Pál Szeiler. An exploratory survey of recreational activities using Twitter data with logic-based location categorization. In *Information Modelling and Knowledge Bases XXXIV*, pages 48–67. IOS Press, 2023.

[14] Ferenc Béres, Tamás Vilmos Michaletzky, Rita Csoma, and András A. Benczúr. Network embedding aided vaccine skepticism detection. *Applied Network Science*, 8(1):11, 2023. Springer International Publishing Cham.

[15] Ferenc Béres, István András Seres, Domokos M. Kelen, and András A. Benczúr. ethp2psim: Evaluating and deploying privacy-enhanced peer-to-peer routing protocols for the Ethereum network. *arXiv preprint arXiv:2306.15024*, 2023.

[16] András Hubai, Tamás Róbert Mezei, Ferenc Béres, András Benczúr, and István Miklós. Constructing and sampling partite, 3-uniform hypergraphs with given degree sequence. *PLOS ONE*, 19(5):e0303155, 2024. Public Library of Science, San Francisco, CA, USA.