



Máté Józsa



WORK EXPERIENCE

Babes Bolyai University

City: Cluj-Napoca | Country: Romania

[01/08/2023 – Current] **University research assistant**

Transylvanian Institute of Neuroscience (TINS)

City: Cluj-Napoca | Country: Romania

[01/10/2023 – Current] **Research assistant**

EDUCATION AND TRAINING

[30/09/2016 – 04/07/2019] **BSc Physics**

Babeş-Bolyai University

Address: Strada Mihail Kogălniceanu, 1, 400000, Cluj-Napoca, Romania | **Field(s) of study:** Physics | **Final grade:** License: 9.75; Average of grades: 9.90 | **Thesis:** "Élet és evolúció mint metabolikus háló"

[30/09/2019 – 15/07/2021] **MSc Physics**

Babeş-Bolyai University

Address: Strada Mihail Kogălniceanu, 1, 400000, Cluj-Napoca, Romania | **Field(s) of study:** Computational Physics | **Final grade:** 9.77 (10 for thesis) | **Thesis:** Classifying real-world networks by machine learning methods

[01/09/2021 – Current] **PhD Physics**

Babes-Bolyai University

City: Cluj-Napoca | Country: Romania |

[10/01/2024 – Current] **BSc Psychology**

Babeş-Bolyai University

City: Cluj-Napoca | Country: Romania |

LANGUAGE SKILLS

Mother tongue(s): Hungarian

Other language(s):

English

LISTENING C1 READING C1 WRITING C1

SPOKEN PRODUCTION C1 SPOKEN INTERACTION C1

Romanian

LISTENING B2 READING B2 WRITING B2

SPOKEN PRODUCTION B2 SPOKEN INTERACTION B2

German

LISTENING B2 READING B2 WRITING B2

SPOKEN PRODUCTION B2 SPOKEN INTERACTION B2

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user

CONFERENCES & SEMINARS

- [22/05/2019 – 25/05/2019] **Erdélyi Tudományos Diákköri Konferencia (ETDK)** Cluj-Napoca
Élet és evolúció metabolikus hálózati modellezése
Link: https://issuu.com/kmdsz/docs/etdk_kivonatos_f_zet
- [22/11/2019 – 23/11/2019] **Erdélyi Természettudományok Konferencia (ETK)** Cluj-Napoca
Önfenntartásra optimalizált metabolikus hálózatok gráf tulajdonságai
- [13/09/2020 – 15/09/2020] **45th Conference of the Middle European Cooperation in Statistical Physics (MECO45)**
Cluj-Napoca
Anatomy of the parameter space of real-world networks
Link: <http://atom.ubbcluj.ro/meco45/>
- [07/04/2021] **OTDK 2021**
Élet és evolúció metabolikus hálózati modellezése
- [01/07/2021] **Networks2021 (A joint Sunbelt and NetSci conference)**
In search for defining structural measures of real-world complex networks
- [12/06/2022 – 16/06/2022] **MECO47 (47th conference of the middle european cooperation in statistical physics),**
Investigating brain wiring by simple statistical models
- [24/08/2022 – 26/09/2022] **Econophysics Colloquium 2022**
Estimation of Gini coefficient from incomplete datasets
- [22/05/2023 – 26/05/2023] **MECO48 (48th conference of the middle european cooperation in statistical physics)**
The Gini coefficient from incomplete data
- [10/07/2023 – 14/07/2023] **NetSci2023 (International School and Conference on Network Science)**
Exploring coarse-graining effects in structural brain connectivity
- [03/09/2023 – 08/09/2023] **GEWP2023: 6th Grandmaster Early-Career Workshop in Physics**
Investigating the impact of coarse-graining on structural brain connectivity
- [17/11/2023 – 18/11/2023] **The 16th International Conference on Applied Statistics (ICAS2023)**
Predeal, Romania
Estimating the Gini coefficient from incomplete data
- [21/04/2024 – 25/04/2024] **MECO49 (49th conference of the middle european cooperation in statistical physics)**
Unraveling coarse-graining effects in structural brain connectivity

[15/07/2024 – 17/07/2024] **ITISE2024: 10th International Conference on Time Series and Forecasting**

Estimation of the Gini coefficient using incomplete data

[26/05/2025 – 29/05/2025] **BGL-2025: XIII Bolyai-Gauss-Lobachevsky Conference - Non-Euclidean Geometry in Modern Physics and Mathematics**

Maroc

Investigating coarse-graining effects in structural brain connectivity

PUBLICATIONS

[2021] [Opportunities and challenges in partitioning the graph measure space of real-world networks](#)

Reference: Máté Józsa, Alpár S Lázár, Zsolt I Lázár, Opportunities and challenges in partitioning the graph measure space of real-world networks, Journal of Complex Networks, Volume 9, Issue 2, April 2021, cnab006, <https://doi.org/10.1093/comnet/cnab006>

[2022] [f-Gintropy: An Entropic Distance Ranking Based on the Gini Index](#)

Reference: Biró, T. S., Telcs, A., Józsa, M., & Néda, Z. (2022). f-Gintropy: An Entropic Distance Ranking Based on the Gini Index. Entropy, 24(3), 407. <https://doi.org/10.3390/e24030407>

[2023] [Gintropic scaling of scientometric indexes](#)

Reference: Tamás Sándor Biró, András Telcs, Máté Józsa, Zoltán Néda. Gintropic scaling of scientometric indexes. Physica A: Statistical Mechanics and its Applications, Vol. 618, 128717, (2023)

[2024] [Tree size distribution as the stationary limit of an evolutionary master equation](#)

Reference: Kelemen, S., Józsa, M., Hartel, T. et al. Tree size distribution as the stationary limit of an evolutionary master equation. Sci Rep 14, 1168 (2024). <https://doi.org/10.1038/s41598-024-51553-2>

[2024] [Coarse-graining model reveals universal exponential scaling in axonal length distributions](#)

Reference: Máté Józsa, Mária Ercsey-Ravasz, Zsolt I. Lázár. Coarse-graining model reveals universal exponential scaling in axonal length distributions. Journal of Physics: Complexity, Vol. 5(3), 035012, (2024)

[2024] [Length-preserving biconnection gravity and its cosmological implications](#)

Reference: Csillag, L., Hama, R., Józsa, M., Harko, T., & Sabău, S. V. (2024). Length-preserving biconnection gravity and its cosmological implications. In Journal of Cosmology and Astroparticle Physics (Vol. 2024, Issue 12, p. 034). IOP Publishing.

[2025] [Does Excellence Correspond to Universal Inequality Level?](#)

Reference: Soumyajyoti Biswas, Bikas K. Chakrabarti, Asim Ghosh, Sourav Ghosh, Máté Józsa, Zoltán Néda. Does Excellence Correspond to Universal Inequality Level? Entropy, Vol. 27(5), 495, (2025)