



Dr. Ing. Levente Varga

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Cetățenie: maghiară, română

EXPERIENȚA PROFESIONALĂ

Transylvanian Institute of Neuroscience

Localitatea: Cluj-Napoca | Țara: România

Scientific Researcher - Reward-stress interactions as neural substrate for resilience and vulnerability in mental health: A translational large-scale project

[mai 2024 – În curs]

Universitatea Babeș-Bolyai, Facultatea de Fizică

Localitatea: Cluj-Napoca | Țara: România

Scientific Researcher - Brain network analysis for capturing transitions between perceptual states

[iun. 2022 – dec. 2024]

Transylvanian Institute of Neuroscience

Localitatea: Cluj-Napoca | Țara: România

Scientific Researcher - Understanding brain circuit dysfunction in amblyopia using large-scale multimodal recordings in a new visuomotor task applied to animal models and patients

[mar. 2022 – dec. 2024]

Universitatea Babeș-Bolyai, Facultatea de Matematică și Informatică

Localitatea: Cluj-Napoca | Țara: România

Scientific Researcher - SWarm Intelligence of Independent aRtificially active particLes

[aug. 2021 – nov. 2023]

Universitatea Babeș-Bolyai, Institutul de Studii Doctorale

Localitatea: Cluj-Napoca | Țara: România

IT specialist, System administrator

[nov. 2020 – În curs]

Universitatea Babeș-Bolyai, Facultatea de Matematică și Informatică

Localitatea: Cluj-Napoca | Țara: România

Lecturer

[feb. 2020 – În curs]

Rețele de calculatoare, Vizualizarea datelor, Instruire asistată de calculator, Metodologia cercetării științifice

Universitatea Babeș-Bolyai, Facultatea de Fizică

Localitatea: Cluj-Napoca | Țara: România

- [iun. 2018 – nov. 2020] **Scientific Researcher - Comparative Investigation of the cortical circuits in mouse, NHP and human**
Universitatea Babeş-Bolyai, Facultatea de Fizică
Localitatea: Cluj-Napoca | Țara: România
- [ian. 2017 – sept. 2018] **Scientific Researcher - Dezvoltarea unui indicator scientometric optim**
Universitatea Babeş-Bolyai, Facultatea de Matematică și Informatică
Localitatea: Cluj-Napoca | Țara: România
- [feb. 2016 – feb. 2020] **Assistant**
MTA EK MFA
Localitatea: Budapest | Țara: Ungaria
- [nov. 2013 – sept. 2014] **Scientific Researcher - Evolutionary game theory**
Universitatea Babeş-Bolyai, Facultatea de Fizică
Localitatea: Cluj-Napoca | Țara: România
- [apr. 2013 – dec. 2016] **Scientific Researcher - Improving scientific evaluation through analysis of scientific networks research**
SC. XENZOR SRL.
Localitatea: Odorheiu Secuiesc | Țara: România
- [iun. 2011 – aug. 2011] **System administrator**
SC. XENZOR SRL.
Localitatea: Odorheiu Secuiesc | Țara: România
- [iun. 2010 – aug. 2010] **System administrator**

EDUCAȚIE ȘI FORMARE PROFESIONALĂ

- [oct. 2014 – iun. 2019] **PhD student**
Universitatea Babeş-Bolyai, Facultatea de Fizică <https://phys.ubbcluj.ro/>
Localitatea: Cluj-Napoca | Țara: România | Nivelul CEC: Nivelul 8 CEC | Nivelul CNC: PhD
- [oct. 2012 – iul. 2014] **Optimization of computer models**
Universitatea Babeş-Bolyai, Facultatea de Matematică și Informatică <https://cs.ubbcluj.ro/>
Localitatea: Cluj-Napoca | Țara: România | Nivelul CEC: Nivelul 7 CEC | Nivelul CNC: MSc
- [oct. 2008 – iun. 2012] **Information Engineering**

Localitatea: Cluj-Napoca | Țara: România | Nivelul CEC: Nivelul 6 CEC | Nivelul CNC: BSc

[sept. 2004 – iun. 2008] **Mathematics and Informatics class**

Liceul Teoretic Orbán Balázs

Localitatea: Cristuru Secuiesc | Țara: România | Nivelul CEC: Nivelul 5 CEC | Nivelul CNC: HS

[sept. 2000 – iun. 2004] **Middle School**

Liceul Teoretic Orbán Balázs

Localitatea: Cristuru Secuiesc | Țara: România | Nivelul CEC: Nivelul 4 CEC | Nivelul CNC: MS

COMPETENȚE LINGVISTICE

Limbă(i) maternă(e): maghiară

Altă limbă (Alte limbi):

română

COMPREHENSIUNE ORALĂ B2 CITIT B2 SCRIS B2

EXPRIMARE SCRISĂ B2 CONVERSAȚIE B2

engleză

COMPREHENSIUNE ORALĂ B2 CITIT B2 SCRIS B2

EXPRIMARE SCRISĂ B2 CONVERSAȚIE B2

germană

COMPREHENSIUNE ORALĂ A1 CITIT A1 SCRIS A1

EXPRIMARE SCRISĂ A1 CONVERSAȚIE A1

Niveluri: A1 și A2 Utilizator de bază B1 și B2 Utilizator independent C1 și C2 Utilizator experimentat

COMPETENȚE

Java, HTML, JavaScript, CSS, SQL, PHP | Programing | C/C++, Java, Android, C#, Assembly, Erlang, Prolog, LabVIEW, Python | Full computer control | Microsoft Office | Hardware

COMPETENȚE DE COMUNICARE ȘI INTERPERSONALE

Spirit de echipă

Abilități bune de comunicare și organizare

PERMIS DE CONDUCERE

Motocicletă: A
Autoturism: B

HOBBY-URI ȘI TEME DE INTERES

Ciclism

Timpul petrecut în aer liber

DIY (bricolaj)

- [2025] [Protocol to study brain dynamics of mammals through the hierarchy of complex correlation patterns defining a robust functional architecture](#)
- Levente Varga, Balázs Péntek, Botond Molnár, Laura Perez-Cervera, Mohamed Kotb Selim, Antonio Díaz-Parra, David Moratal, Wolfgang H. Sommer, Santiago Canals, Raul C. Mureșan, Vasile V. Moca, Maria Ercsey-Ravasz, Protocol to study brain dynamics of mammals through the hierarchy of complex correlation patterns defining a robust functional architecture. STAR protocols 6(2), 103693 (2025). DOI: 10.1016/j.xpro.2025.103693
- [2024] [Brain dynamics supported by a hierarchy of complex correlation patterns defining a robust functional architecture](#)
- Levente Varga, Vasile V. Moca, Botond Molnár, Laura Perez-Cervera, Mohamed Kotb Selim, Antonio Díaz-Parra, David Moratal, Balázs Péntek, Wolfgang H. Sommer, Raul C. Mureșan, Santiago Canals, Maria Ercsey-Ravasz, Brain dynamics supported by a hierarchy of complex correlation patterns defining a robust functional architecture. Cell Systems 15(8), p770-786.e5 (2024). DOI: 10.1016/j.cels.2024.07.003
- [2022] [Pattern formation and flocking for particles near the jamming transition on resource gradient substrates](#)
- Levente Varga, András Libál, Charles Reichhardt, Cynthia J. Olson Reichhardt, Pattern formation and flocking for particles near the jamming transition on resource gradient substrates. Phys. Rev. E 106, 064602 (2022). DOI: 10.1103/PhysRevE.106.064602
- [2022] [Active regimes for particles on resource landscapes](#)
- Levente Varga, András Libál, Cynthia J. Olson Reichhardt, Charles Reichhardt, Active regimes for particles on resource landscapes. Phys. Rev. Research 4, 013061 (2022). DOI: 10.1103/PhysRevResearch.4.013061
- [2021] [Mitigating ageing bias in article level metrics using citation network analysis](#)
- István Tóth, Zsolt I. Lázár, Levente Varga, Ferenc Járai-Szabó, István Papp, Razvan V. Florian, Mária Ercsey-Ravasz, Mitigating ageing bias in article level metrics using citation network analysis. Journal of Informetrics 15, 101105 (2021). DOI: 10.1016/j.joi.2020.101105
- [2019] [Scaling in the space-time of the Internet](#)
- István Papp, Levente Varga, Mounir Afifi, István Gere, Zoltán Nédá, Scaling in the space-time of the Internet, Scientific Reports 9, 9734 (2019), DOI: 10.1038/s41598-019-46208-6
- [2018] [Commuting patterns: the Flow and Jump model and supporting data](#)
- Levente Varga, Géza Tóth, Zoltán Nédá, Commuting patterns: the Flow and Jump model and supporting data, EPJ Data Science 7, 37 (2018), DOI: 10.1140/epjds/s13688-018-0167-3
- [2017] [Science and Facebook: The same popularity law!](#)
- Nédá Zoltán, Levente Varga, Biró Tamás Sándor, Science and Facebook: The same popularity law!, PLoS ONE 12(7), e0179656 (2017), DOI: 10.1371/journal.pone.0179656

- [2017] [**Stochastic graph Voronoi tessellation reveals community structure**](#)
- Zsolt I. Lázár, István Papp, Levente Varga, Ferenc Járai-Szabó, Dávid Deritei, Mária Ercsey-Ravasz, Stochastic graph Voronoi tessellation reveals community structure, Phys. Rev. E 95(2), 022306 (2017), DOI: 10.1103/PhysRevE.95.022306
- [2017] **An improved radiation model and its applicability for understanding commuting patterns in Hungary**
- Levente Varga, Géza Tóth, Zoltán Nédá, An improved radiation model and its applicability for understanding commuting patterns in Hungary, Regional Statistics 6(2), 27 – 38 (2017)
- [2016] [**Anisotropic invasion and its consequences in two-strategy evolutionary games on a square lattice**](#)
- György Szabó, Levente Varga, Mátyás Szabó, Anisotropic invasion and its consequences in two-strategy evolutionary games on a square lattice, Phys. Rev. E 94(5), 052314 (2016), DOI: 10.1103/PhysRevE.94.052314
- [2016] [**Further We Travel the Faster We Go**](#)
- Levente Varga, András Kovács, Géza Tóth, István Papp, Zoltán Nédá, Further We Travel the Faster We Go, PLoS ONE 11(2), e0148913 (2016), DOI: 10.1371/journal.pone.0148913
- [2015] [**Payoff components and their effects in a spatial three-strategy evolutionary social dilemma**](#)
- Jeromos Vukov, Levente Varga, Benjamin Allen, Martin A. Nowak, and György Szabó, Payoff components and their effects in a spatial three-strategy evolutionary social dilemma, Phys. Rev. E 92, 012813 (2015), DOI: 10.1103/PhysRevE.92.012813
- [2014] [**Self-organizing patterns in an evolutionary rock- paper-scissors game for stochastic synchronized strategy updates**](#)
- Levente Varga, Jeromos Vukov and György Szabó, Self-organizing patterns in an evolutionary rock- paper-scissors game for stochastic synchronized strategy updates, Phys. Rev. E 90, 042920 (2014), DOI: 10.1103/PhysRevE.90.042920
- [2014] [**Evolutionary matching-pennies game on bipartite regular networks**](#)
- György Szabó, Levente Varga and István Borsos, Evolutionary matching-pennies game on bipartite regular networks, Phys. Rev. E 89, 042820 (2014), DOI: 10.1103/PhysRevE.89.042820
- [2014] [**Community detection by graph Voronoi diagrams**](#)
- Dávid Deritei, Zsolt I. Lázár, István Papp, Ferenc Járai-Szabó, Róbert Sumi, Levente Varga, Erzsébet Ravasz Regan and Mária Ercsey-Ravasz, Community detection by graph Voronoi diagrams, New J. Phys. 16, 063007 (2014), DOI: 10.1088/1367-2630/16/6/063007