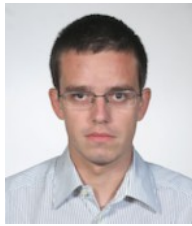


PERSONAL INFORMATION

Botond Molnár



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WORK EXPERIENCE

-
- 07/06/2018–Present **Physicist**
Transylvanian Institute of Neuroscience
Timotei Cipariu Sq. 9, 400191 Cluj-Napoca (Romania)
www.tins.ro
- 25/04/2018–Present **Research assistant**
Faculty of Physics, Babeş-Bolyai University
M. Kogălniceanu 1, 400084 Cluj-Napoca (Romania)
www.phys.ubbcluj.ro
- 28/09/2017–Present **Teaching assistant**
Faculty of Mathematics and Computer Science, Babeş-Bolyai University
M. Kogălniceanu 1, 400084 Cluj-Napoca (Romania)
www.cs.ubbcluj.ro
- 01/01/2016–31/03/2018 **Physicist**
Romanian Institute of Science and Technology
str. Cireşilor nr. 29, 400487 Cluj-Napoca (Romania)
www.rist.ro
- 01/11/2011–31/10/2014 **Research assistant**
Faculty of Physics, Babeş-Bolyai University
str. Mihail Kogălniceanu nr. 1, 400084 Cluj-Napoca (Romania)
www.ubbcluj.ro
- 21/02/2011–21/11/2011 **Software engineer**
FRSGlobal Romania SRL. - a Wolters Kluwer Financial Services Company
Brâncuşi Street 74-76, Cluj-Napoca (Romania)
www.frsglobal.com
- 10/2009–11/2010 **Software developer**
SC. eMedWare SRL.
Onisifor Ghibu street 14, Cluj-Napoca (Romania)
www.emedware.eu
- 09/01/2009–20/06/2009 **Box Officer**
SC. Odeon Cineplex SRL.
Maria Rosetti street 49A, 3rd floor, Bucharest, Cluj-Napoca (Romania)

www.odeoncineplex.ro

EDUCATION AND TRAINING

- 2011–21/10/2016 **PhD**
 Babeş-Bolyai University, Cluj-Napoca (Romania)
 Continuous-Time Dynamical Systems for Solving Constraint Satisfaction Problems

 Scientific conductor: Dr. Prof. Zoltán Néda
 Scientific advisor: Dr. Mária Ercsey-Ravasz
- 2008–2010 **Master in Physics**
 Babeş-Bolyai University, Cluj-Napoca (Romania)
 Correlation clustering on frustrated networks studied with a stochastic renormalization method
 Scientific conductor: Dr. Prof. Zoltán Néda
- 2005–2008 **Bachelor's degree in Physics**
 Babeş-Bolyai University, Cluj-Napoca (Romania)
 Optimal clusterization of frustrated networks studied with a stochastic renormalization method
 Scientific conductor: Dr. Prof. Zoltán Néda
- 1993–2005 **Baccalaureate exam**
 "Székely Mikó" Secondary School, Sfântu Gheorghe (Romania)
 Specialization in Mathematics and Computer Science
- 2001–2004 **Piano player degree**
 School of folk arts, Sfântu Gheorghe (Romania)
 - piano playing techniques
 - general music theory
 - general music history

PERSONAL SKILLS

Mother tongue(s) Hungarian

Foreign language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
Romanian	C2	C2	C2	C2	C2
English	C2	C2	C2	C2	C2
German	C2	C2	B2	B1	B2
Chinese	A2	B1	A1	A2	B1
French	A2	A2	A1	A1	A2

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user
 Common European Framework of Reference for Languages

Organisational / managerial skills Leadership: from 2008 acting as a musical director of the Visszhang Students' Choir and Symphony Orchestra which has around 70-80 member

Organization skill gained during the school years when we were organizing several cultural events, like theater performances, exhibitions and continued in the Visszhang Cultural Association organizing cultural events, concerts, tours of the Visszhang Students' Choir and Symphony Orchestra and international collaborations, choir festivals.

Job-related skills Teaching experience
 Starting from 2011 - Electricity and magnetism, seminar, Faculty of Physics, Babeş-Bolyai University
 Starting from 2014 - Introduction in programming, laboratory, Faculty of Mathematics and Computer Science, Babeş-Bolyai University
 Starting from 2015 - Operating systems, laboratory, Faculty of Mathematics and Computer Science, Babeş-Bolyai University

Digital skills

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem-solving
Proficient user	Proficient user	Proficient user	Proficient user	Proficient user

Digital skills - Self-assessment grid

Operating systems: MS-DOS, Windows family, Linux, Mac OS X
 Programming languages: C, C++, C#, VB, Java, JavaScript, ActionScript, Mono, Fortran
 Developer tools: XCode, Microsoft Visual Studio, Eclipse, Geany, MonoDevelop, MatLab, Wolfram Mathematica,
 Hardware knowledge: advanced hardware knowledge (assemble, disassemble, troubleshooting, repairs)
 Network/Infrastructure: HTTP, TCP/IP, infrastructure knowledge (building, configuring, troubleshooting, repairs)
 Database: Access, MySQL, ORACLE
 Multimedia: Avid Sibelius, Adobe Creative Suite, Corel Suite, Propellerhead Reason, Steinberg Cubase, Steinber Nuendo, 3DSMax
 Web programming: HTML, CSS, JavaScript, angularJS, JQuery, XML, DOM, PHP
 Other: SVN, FireBug, SeleniumHQ

ADDITIONAL INFORMATION

Publications

- Molnár, B.**, Molnár, F., Varga, M., Toroczka, Z. and Ercsey-Ravasz, M. (2018) *A continuous-time MaxSAT solver with high analog performance*, Nature Communcations, DOI: 10.1038/s41467-018-07327-2
- Sumi, R., **Molnár, B.** and Ercsey-Ravasz, M. (2014) *Robust optimization with transiently chaotic dynamical systems*, European Physics Letters, 106(4), DOI: 10.1209/0295-5075/106/40002
- Molnár, B.** and Ercsey-Ravasz, M. (2014), *Analog dynamics for solving max-SAT problems*, 14th Int. Workshop on Cellular Nanoscale Networks and their Applications (CNNA), DOI:10.1109/CNNA.2014.6888597
- Molnár, B.**, Sumi, R. and Ercsey-Ravasz, M. (2014), *A CNN SAT-solver robust to noise*, 14th Int. Workshop on Cellular Nanoscale Networks and their Applications (CNNA), DOI:10.1109/CNNA.2014.6888596
- Molnár, B.** and Ercsey-Ravasz, M. (2013) *Asymmetric Continuous-Time Neural Networks without Local Traps for Solving Constraint Satisfaction Problems*, PLoS ONE, 8(9), DOI:10.1371/journal.pone.0073400
- Molnár, B.**, Toroczka, Z. and Ercsey-Ravasz, M. (2012), *Continuous-time Neural Networks Without Local Traps for Solving Boolean Satisfiability*, 13th Int. Workshop on Cellular Nanoscale Networks and their Applications (CNNA), DOI:10.1109/CNNA.2012.6331411
- Néda, Z., Sumi, R., Ercsey-Ravasz, M, Varga, M., **Molnár B.** and Cseh, Gy. *Correlation clustering on networks*, Journal of Physics A: Math. Theor. 42 (2009) 345003, DOI:10.1088/1751-

8113/42/34/345003

Projects SyBil-AA Horizon 2020

Modeling and validating disease state networks in human and animal brains for understanding pathophysiology, predicting outcomes and improving therapy

Project manager: Dr. Raul Mureşan

Starting Research Grant of the Romanian Government

Abordarea problemelor de optimizare prin sisteme dinamice cu timp continuu: dificultatea optimizarii ca haos transient

Project manager: Dr. Mária Ercsey-Ravasz

Conferences 2014 talk at the **14th IEEE CNNA2014** conference in Notre Dame, IN, USA
2012 talk at the **13th IEEE CNNA2012** conference in Torino, Italy
2010 plenary talk at the **3rd Yalta Optimization Conference** in Yalta, Ukraine
2009 Special Prize in **Complex Systems Physics Section of the 29th National Students' Scientific Conference** in Szombathely, Hungary
2008 presentation at the **Rodosz Conference** in Cluj
2008 presentation at the **Fall Scientific Conference organized by the Science Department of Transylvanian Museum Society** in Cluj
2008 1st prize in **Physics Section of the 11th Transylvanian Students' Scientific Conference** in Cluj
2008 presentation at the **Eötvös Conference** in Budapest, Hungary
2007 presentation at the **Fall Scientific Conference organized by the Science Department of Transylvanian Museum Society** in Cluj
2007 presentation on the „**Körmöczi János**” **Physics Day** in Cluj
2007 presentation at the **Physics Department of Hungarian University Federation of Cluj**
2007 Special prize in **Pedagogy Section of the 10th Transylvanian Students' Scientific Conference**
2004 presentation at the **Physics Department of Hungarian University Federation of Cluj**

Other Scientific Achievements 2014 summer school at **GEFENOL, IFISC on Statistical Physics of Complex and Small Systems**, Palma de Mallorca, Spain

2013 scientific visit at **Beth Israel Deaconess Medical Center – A teaching hospital of Harvard Medical School, Boston, MA, USA**

2013 scientific visit at **University of Notre Dame, IN, USA**

2013 scientific visit at **Pázmány Péter Catholic University, Budapest, Hungary**

2012 scientific visit at **University of Notre Dame, IN, USA**

2009 summer school at **IPP Summer University on Plasma Physics and Fusion Research in Max Planck Institut, Greifswald, Germany**

2007 professional practice at the **Atomic Power Plant**, at Paks, Hungary

2005 scientific visit at **CERN** (Geneva, Switzerland), **ILL** and **ESRF** (Grenoble, France)

Memberships 2008-2009 member of **Physics Department of Hungarian University Federation of Cluj**
2007-2008 member of **Pedagogy Department of Hungarian University Federation of Cluj**

2007-2008 member of **Physics Department of Hungarian University Federation of Cluj**

2006-2007 member of **Physics Department of Hungarian University Federation of Cluj**

2006-2007 member of **Pedagogy Department of Hungarian University Federation of Cluj**