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## GÁBOR CSÁRDI

### education

2003–2008 Ph.D in Computer Science, Faculty of Informatics, Eötvös University, Budapest, Hungary.

Dissertation: *Modeling complex systems by evolving networks.*

Advisor: *Prof Péter Érdi.*

1998–2003 M.Sc., Computer Science, Eötvös University, Budapest, Hungary

### research

2011– Postdoctoral Researcher at Department of Statistics, Harvard University.

Advisor: *Prof Edoardo M Airoldi.*

2008–2011 Postdoctoral Researcher at Department of Medical Genetics, University of Lausanne and Swiss Institute of Bioinformatics, Switzerland.

Advisor: *Prof Sven Bergmann.*

2006–2007 Research Fellow, Department of Biophysics, Research Institute for Particle and Nuclear and Physics, Hungarian Academy of Sciences.

2003–2006 Research Assistant, Department of Biophysics, Research Institute for Particle and Nuclear and Physics, Hungarian Academy of Sciences.

2002, 2004, 2005, 2006. Research and teaching assistant, three months each, Center for Complex Systems Studies, Kalamazoo College, Kalamazoo, MI, USA.

2002. Five months at Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, The Netherlands.

### publications *Books*

ED Kolaczyk, G Csárdi. *Statistical Analysis of Network Data with R.* Springer. 2014.

G Csárdi, T Nepusz, EM Airoldi. *Network Analysis with R/igraph.* Springer. In preparation. To appear in 2015.

T Nepusz, G Csárdi, EM Airoldi. *Network Analysis with Python/igraph.* In preparation. To appear in 2015.

*Journal articles* – \*marks equal contribution

G Csárdi\*, AM Franks\*, DS Choi, EM Airoldi, DA Drummond. Accounting for experimental noise reveals that transcription dominates control of steady-state protein levels in yeast. Under revision at *PLOS Genetics*.

AM Franks\*, G Csárdi\*, DA Drummond, EM Airoldi. Estimating a structured covariance matrix from multi-lab measurements in high-throughput biology. *Journal of the American Statistical Association.* Forthcoming. 2014.

- P Artimo, M Jonnalagedda, K Arnold, D Baratin, **G Csárdi**, *et al.* ExPASy: SIB bioinformatics resource portal. *Nucleic acids research*. 40: W597-W603. 2012.
- V Verdier, **G Csárdi**, AS de Preux-Charles, JJ Médard, AB Smit, MHG Verheijen, S Bergmann, R Chrast. Aging of myelinating glial cells predominantly affects lipid metabolism and immune response pathways. *Glia*. 60: 751–760. 2012.
- D Brawand\*, M Soumillon\*, A Necsulea\*, P Julien, **G Csárdi**, *et al.* The evolution of gene expression levels in mammalian organs. *Nature*. 478: 343–348. 2011.
- CN Henrichsen\*, **G Csárdi**\*, MT Zobot, C Fusco, S Bergmann, G Merla, A Raymond. Using Transcription Modules to Identify Expression Clusters Perturbed in Williams-Beuren Syndrome. *PLoS computational biology*. 7: e1001054. 2011.
- A Lüscher\*, **G Csárdi**\*, AM de Lachapelle\*, Z Kutalik\*, B Peter, S Bergmann. ExpressionView – an interactive viewer for modules identified in gene expression data. *Bioinformatics*. 26: 2062–2063. 2010.
- G Csárdi**, Z Kutalik, S Bergmann. Modular analysis of gene expression data with R. *Bioinformatics*. 26: 1376–1377. 2010.
- R Liechti, **G Csárdi**, *et al.* EuroDia: a beta-cell gene expression resource. *Database* 2010: baq024. 2010.
- KJ Strandburg, **G Csárdi**, J Tobochnik, P Erdi, L Zalányi. Patent citation networks revisited: signs of a twenty-first century change. *North Carolina Law Review*. 87: 1657. 2008.
- G Csárdi**, KJ Strandburg, L Zalányi, J Tobochnik, P Érdi. Modeling innovation by a kinetic description of the patent citation system. *Physica A: Statistical Mechanics and its Applications*. 374: 783–793. 2007.
- KJ Strandburg, **G Csárdi**, J Tobochnik, P Érdi, L Zalányi. Law and the Science of Networks: An Overview and an Application to the ‘Patent Explosion’. *Berkeley Technology Law Journal*. 21: 1293. 2007.
- L Zalányi, **G Csárdi**, T Kiss, M Lengyel, R Warner, Jan Tobochnik, P Érdi. Properties of a random attachment growing network. *Physical Review E*. 68: 066104. 2003
- F Bazsó, L Zalányi, **G Csárdi**. Channel noise in Hodgkin–Huxley model neurons. *Physics Letters A*. 311: 13–20. 2003.

#### *Book chapter*

- G Csárdi**, KJ Strandburg, J Tobochnik, P Érdi. The inverse problem of evolving networks – with application to social nets, in *Handbook of Large-Scale Random Networks* edited by B Bollobás, R Kozma, D Miklós. 409–443. 2008.

*Conference proceedings*

G Csárdi, K Strandburg, L Zalányi, J Tobochnik, P Érdi. Estimating the dynamics of kernel-based evolving networks, in *Unifying Themes in Complex Systems, Proceedings of the Sixth International Conference on Complex Systems*, edited by A Minai, D Braha, Y Bar-Yam. 90–97. 2008.

G Csárdi. Dynamics of Citation Networks, in *Artificial Neural Networks – ICANN 2006*, edited by SD Kollias, A Stafylopatis, W Duch, E Oja. 698–709. 2006.

G Csárdi, T Nepusz. The igraph software package for complex network research *InterJournal Complex Systems* 1695. 2006.

grants,  
honors &  
awards

Best 5 minute postdoc presentation at the Harvard Symposium of Applied Statistics, 2012.

Scholarship to the FEBS course on “Structural variations in genome, gene expression, Single cell analysis: Arrays, Beads, High-throughput sequencing”, 2008.

Student grant to the International Conference on Artificial Neural Networks, 2006.

Scholarship to the Santa Fé Complex Systems Summer School, 2004.

Young researcher scholarship of the Hungarian Academy of Sciences, 2003–2006.

Graduated in computer science with distinction, Eötvös University, Faculty of Science, 2003.

Distinguished student of the faculty award, Eötvös University, Faculty of Science, 2002.

Erasmus scholarship, Eindhoven University of Technology, five months, 2002.

selected  
invited pre-  
sentations

Mathematics of Data Analysis in Cybersecurity Workshop, Institute for Computational and Experimental Research in Mathematics, 2014.

Biclustering methods for microarray data. Workshop at Hasselt University, Belgium. 2010.

Department of Political Science at Arizona State University, 2010.

The Harvard Networks in Political Science Conference, Pre-conference Workshops, 2008.

Institute for Statistics and Mathematics, Vienna University of Economics and Business, Vienna, Austria, 2008.

teaching

2002, 2004, 2005, 2006. Research and teaching assistant, three months each, Center for Complex Systems Studies, Kalamazoo College, Kalamazoo, MI, USA. Undergraduate level courses: Parallel Programming, Dynamic Models in Social Sciences, Complex Systems, Computational Neuroscience.

2000–2002 Teaching Fellow at Faculty of Science, Eötvös University, Budapest.  
Undergraduate level courses: Introduction to Programming, Programming Methodology I–II.

**service**

Associate editor of Journal of Statistical Software  
Reviewing for Journal of Statistical Software, Journal of Machine Learning Research, Physical Review E, Bioinformatics, Physica A, Biosystems, Computational Statistics and Data Analysis, Neural Information Processing Systems, International Conference on Artificial Intelligence and Statistics.  
Open source software:  
<http://igraph.org>,  
<https://github.com/gaborcsardi>,  
<https://github.com/metacran>.

**references**

Available upon request.