

Professional Experience

Professional Preparation

- Undergraduate and graduate studies at the Eötvös Loránd University, Faculty of Sciences, Budapest: M.Sc. in Mathematics (Probability and Statistics).
- Ph.D. in Mathematics, Eötvös Loránd University, Budapest, 1983.
- Postdoctoral fellowship at the Alfréd Rényi Mathematical Institute of the Hungarian Academy of Sciences, Budapest, 1988-1990.
- C.Sc. in Mathematics, Hungarian Academy of Sciences, 1993.
- Title of Doctor Habil, Budapest University of Technology and Economics, 2014.

Appointments

- Associate professor, Department of Stochastics, Institute of Mathematics, Budapest University of Technology and Economics (former Technical University of Budapest), 1996–.
- Assistant professor, Department of Mathematics, Faculty of Civil Engineering, Technical University of Budapest), 1992–1996.
- Visitor of the DIMACS, Center for Discrete Mathematics, Rutgers University, NJ, USA, 1990–1991.
- Research fellow at the Institute for Computer Science and Control of the Hungarian Academy of Sciences, Department of Applied Mathematics, Budapest, –1988.

Publications

Most important five publications

- Bolla, M., *Spectral Clustering and Biclustering. Learning Large Graphs and Contingency Tables*. Wiley, 2013.
- Bolla, M., SVD, discrepancy, and regular structure of contingency tables, *Discrete Applied Mathematics* **176** (2014), 3-11.
- Bolla, M., Modularity spectra, eigen-subspaces and structure of weighted graphs, *European Journal of Combinatorics* **35** (2014), 105-116.
- Bolla, M., Penalized versions of the Newman–Girvan modularity and their relation to normalized cuts and k-means clustering, *Physical Review E* **84** (1), 016108 (2011).
- Bolla, M., Recognizing linear structure in noisy matrices, *Linear Algebra and Its Applications* **402** (2005), 228-244.

Further Significant Publications

- Bolla, M., Friedl, K., Krámlí, A., Singular value decomposition of large random matrices (for two-way classification of microarrays), *Journal of Multivariate Analysis* **101** (2010) 434-446.
- Bolla, M., Noisy random graphs and their Laplacians, *Discrete Mathematics* **308** (2008), 4221-4230.
- Bolla, M., Distribution of the eigenvalues of random block-matrices. *Linear Algebra and its Applications* **377** (2004), 219-240.

- Bolla, M., Tusnády, G., Spectra and optimal partitions of weighted graphs, *Discrete Mathematics* **128** (1994), 1-20.
- Bolla, M., Spectra, Euclidean representations and clusterings of hypergraphs, *Discrete Mathematics* **117** (1993), 19-39.

Synergistic Activities

- Managing editor of the book *Contests in Higher Mathematics, Miklós Schweitzer Competitions* 1962 -1991, *Springer*, 1996 (ed. Gábor J. Székely, series ed. Paul R. Halmos), ISBN 0-387-94588-1.
- Reviewer no. 072120 of the Mathematical Reviews, AMS, 2010–.
- Referees for journals *Annals of Mathematics* and *Artificial Intelligence*, *Discrete Applied Mathematics*, *Biometrika*, and *Electronic Journal of Linear Algebra*.
- Teaches and provides course material for Statistics courses at the Central European University (Budapest) and leads undergraduate research courses for US students at the Budapest Semester of Mathematics. Coauthor of the Hungarian textbook: Bolla, M., Krámli, A., *Statistikai következtetések elmélete (Theory of statistical inference)*, Typotex, Budapest (2005).
- Included in the book: *Women in the Hungarian science* (in Hungarian), eds. Balogh, M., Palasik, M., Napvilág Publishing House, Budapest, 2010.

Languages

Fluent in English; reads Russian and French.

Awards

- Award by the president of the Hungarian Academy of Sciences for the Statistical Researches on Multiple Congenital Abnormalities of Newborns, 1980.
- Award for Junior Researchers of the Computer and Automation Research Institute of the Hungarian Academy of Sciences, 1983.
- Award of the National Institute of Psychiatry, 1992.
- Farkas Bolyai Award for teaching and research in Mathematics, 2000.

Thesis Advisor

Total Ph.D. students: 2 (Ahmed Elbanna 2012–, Molnár-Sáska Gábor 2000–2003). Total graduate students: 12 (Ildikó Priksz 2013, Zsolt Szabó CEU 2012, Gábor Fodor 2011, Anya Kurdyukova CEU 2010, Erik Bodzsár 2010, Andrea Bán 2009, Tamás Kiss 2009, Mihály Bence Bokor 2008, Dóra Farkas 2007 Róbert Temesi 2006, Márton Tóth 2005, Dávid Gyöngyösi 2004).