

# Dr. Péter Biró

University of Glasgow  
Department of Computing Science  
Sir Alwyn Williams Building  
Lilybank Gardens, Glasgow G12 8QQ  
UK

Office phone: (+44)1413308536  
Email: pbiro@dcs.gla.ac.uk  
<http://www.dcs.gla.ac.uk/~pbiro>  
Date of birth: 20/10/1978  
Nationality: Hungarian

**Interest** Combinatorial optimisation, algorithms, game theory and mechanism design.

**Education** **Budapest University of Technology and Economics** Budapest, Hungary  
Ph.D in Mathematics and Computer Science,  
September 2003 – May 2007

**Corvinus University of Budapest** Budapest, Hungary  
MSc in Economics, 1999 – 2007  
(normal period of study 5 years - concurrent with Maths degree)

**Budapest University of Technology and Economics** Budapest, Hungary  
MSc in Mathematics, 1997 – 2003

**Research** **University of Glasgow** Glasgow, UK  
**Department of Computing Science**  
*Post-doctoral research assistant, June 2007 -*  
On an EPSRC project EP/E011993/1:  
“Matching under Preferences – Algorithm and Complexity”.

**Ericsson Research and Development Lab** Budapest, Hungary  
*Intern, February 2000 - November 2001 (part time)*  
Developed and implemented (in Maple) a graph colouring algorithm for  
frequency assignment of mobile systems.

**Teaching** **Budapest University of Technology and Economics** Budapest, Hungary  
**Department of Computer Science and Information Theory**  
*Teaching assistant, September 1998 - May 2007*

- **Discrete Mathematics:** Led weekly problem session seminars, graded assignments and exams.
- **Algorithm Theory:** Gave lectures (Sept 2006 – May 2007, in English) and led weekly problem session seminars.

**Skills** Experienced in C++, Maple, Matlab, LaTeX, HTML and with Linux and Windows operating systems.

**Languages** Hungarian, English, French (intermediate)

## **Publications PhD Thesis:**

P. BIRÓ, The stable matching problem and its generalizations: an algorithmic and game theoretical approach. *Budapest University of Technology and Economics*, September 2007

## **Journal papers:**

P. BIRÓ, T. FLEINER, R.W. IRVING AND D.F. MANLOVE, The College Admissions problem with lower and common quotas. *Theoretical Computer Science*, 411 (2010) pp:3136–3153

P. BIRÓ AND T. FLEINER, The integral stable allocation problem on graphs. *Discrete Optimization*, 7/2-3 (2010) pp:64–73

P. BIRÓ, D.F. MANLOVE AND S. MITTAL, Size versus stability in the Marriage problem. *Theoretical Computer Science*, 411 (2010) pp:1828–1841

P. BIRÓ AND E.J. MCDERMID, Three-sided stable matchings with cyclic preferences. *Algorithmica*, 58 (2010) pp:5–18

P. BIRÓ, D.F. MANLOVE AND R. RIZZI, Maximum weight cycle packing in directed graphs, with application to kidney exchange programs. *Discrete Mathematics, Algorithms and Applications*, 1/4 (2009) pp:499–517

P. BIRÓ, K. CECHLÁROVÁ AND T. FLEINER, The dynamics of stable matchings and half-matchings for the stable marriage and roommates problem. *International Journal of Game Theory*, 36 (2008) pp:333–352

P. BIRÓ AND K. CECHLÁROVÁ, Inapproximability of the kidney exchange problem. *Information Processing Letters*, 101/5 (2007) pp:199–202

## **Conference papers:**

P. BIRÓ AND T. FLEINER, Fractional solutions for NTU-games. *In Proceedings of COMSOC 2010: 3rd International Workshop on Computational Social Choice*, (2010)

P. BIRÓ, W. KERN AND D. PAULUSMA, On solution concepts for matching games. *In Proceedings of the 7th Annual Conference on Theory and Applications of Models of Computation (TAMC)*, volume 6108 of *Lecture Notes in Computer Science*, Springer-Verlag, (2010) pp:117–127

P. BIRÓ, R.W. IRVING AND D.F. MANLOVE, Popular matchings in the Marriage and Roommates problems. *In Proceedings of the 7th International Conference on Algorithms and Complexity (CIAC)*, volume 6078 of *Lecture Notes in Computer Science*, Springer-Verlag, (2010) pp:97–108

P. BIRÓ AND E. MCDERMID, Matching with sizes (or scheduling with processing set restrictions). *In Proceedings of International Symposium on Combinatorial Optimization (ISCO)*, volume 36 of *Electronic Notes on Discrete Mathematics*, Elsevier, (2010) pp:335–342,

P. BIRÓ AND E.J. MCDERMID, Three-sided stable matchings with cyclic preferences and the kidney exchange problem. *In Proceedings of the 2nd International Workshop on Computational Social Choice (COMSOC 2008)*, (2008) pp:97–108

P. BIRÓ, D.F. MANLOVE AND S. MITTAL, Size versus stability in the Marriage problem. *In Proceedings of the 6th Workshop on Approximation and Online Algorithms (WAOA 2008), volume 5426 of Lecture Notes in Computer Science, Springer-Verlag, (2009) pp:15–28*

P. BIRÓ, Higher education admission in Hungary by a “score-limit algorithm”. *The 18th International Conference on Game Theory at Stony Brook University, (2007)*

P. BIRÓ, Stable exchange of indivisible goods with restrictions. *In Proceedings of the 5th Japanese-Hungarian Symposium on Discrete Mathematics and its Applications, (2007) pp:97–105*

D.J. ABRAHAM, P. BIRÓ AND D.F. MANLOVE, “Almost stable” matchings in the roommates problem. *In Proceedings of the 3rd Workshop on Approximation and Online Algorithms (WAOA 2005), volume 3879 of Lecture Notes in Computer Science, Springer-Verlag (2006) pp:1–14*

**Technical report:**

P. BIRÓ, Student admissions in Hungary as Gale and Shapley envisaged. Technical Report no. TR-2008-291 of the Computing Science Department of Glasgow University, (2008)

**MSc theses (in Hungarian):**

P. BIRÓ, Stabil párosítások gazdasági alkalmazásai. (Stable matchings and their applications in economics.) *Corvinus Egyetem, közgazdász szak (2006)*

P. BIRÓ, Stabil  $b$ -párosítások gráfokon. (Stable  $b$ -matchings on graphs.) *Budapesti Műszaki és Gazdaságtudományi Egyetem, matematikus szak (2002)*

**Other papers (in Hungarian):**

PÉTER BIRÓ, Stabil párosítási modellek és ezeken alapuló központi párosító programok. (Stable matching models and corresponding centralised matching schemes.) *Sigma 37/3-4 (2007) pp:153–175*

PÉTER BIRÓ, KRISZTINA LÓJA, MÁRTON SÜTŐ, Elosztott frekvenciakiosztási algoritmusok tervezése és vizsgálata. (Development and analysis of local frequency assignment algorithms.) *Híradástechnika 17/3 (2002) pp:43-48*