

Curriculum Vitae

Ivan Markovsky

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Degrees

- 2/05 PhD in electrical engineering, Katholieke Universiteit Leuven
Thesis title: Exact and approximate modeling in the behavioral setting
Promoters: Sabine Van Huffel and Bart De Moor
- 6/98 MS in control engineering, Technical University of Sofia, GPA 3.85/4.00
- 6/97 BS in control engineering, Technical University of Sofia, GPA 3.73/4.00
- 6/92 High school degree, National Math High School,
specialization physics, GPA 3.74/4.00

Additional education

- 8/98–12/99 University of Notre Dame, PhD program
- 3/98–6/98 Delft University of Technology, MS thesis work

Experience

- 01/07– lecturer, University of Southampton
- 03/05–12/06 postdoctoral researcher, Katholieke Universiteit Leuven
- 02/05–03/05 visiting researcher, CNR, Bari and CINECA, Bologna, Italy
- 11/00–02/05 research assistant, Katholieke Universiteit Leuven
- 08/99–05/00 teaching assistant, University of Notre Dame and Technical University of Sofia
- 08/98–08/99 research assistant, University of Notre Dame, topic: analysis of hybrid systems

Professional activities

- 01/07– Associate editor of the International Journal of Control
- 08/06 Co-chair of the TLS and EIV modeling workshop, Leuven, August 2006

Grants and distinctions

- 10/2010 ERC starting grant “Structured low-rank approximation” (for five years).
- 06/2008 Honorable Mention in the Alston Householder Prize for best dissertation in numerical linear algebra, awarded at the *XVII Householder Symp.*, Zeuten, Germany.
- 02/2005 Summa cum laude with congratulations of the Board of Examiners.
- 08/2004 Wolfram Research award at the *16th symposium of the Int. Assoc. for Stat. Comput. COMPSTAT'04*, Prague, Czech Republic, August 23-27, 2004.
- 10/2002 Best student paper competition finalist awarded at the *IEEE Int. Conf. on Systems, Man, and Cybernetics*, Hammamet, Tunisia, 6–9 October 2002.
- 06/1997 Graduated as the second top (among 150) student in the faculty of Automatics, Technical University of Sofia, class 1997.

Research interest

- System identification in the behavioral setting
- Algorithms for structured low-rank approximation

Current projects

- Book on “Structured low-rank approximation” (to be published by Springer)
- Fitting of algebraic curves to data
- Data-driven signal processing for speed-up of measurement devices

Selected publications

1. I. Markovsky, J. C. Willems, B. De Moor, and S. Van Huffel. *Exact and approximate modeling of linear systems: A behavioral approach*. SIAM, Philadelphia, 2006.
2. I. Markovsky, A. Kukush, and S. Van Huffel. Consistent least squares fitting of ellipsoids. *Numerische Mathematik*, 98(1):177–194, 2004.
3. I. Markovsky, S. Van Huffel, and R. Pintelon. Block-Toeplitz/Hankel structured total least squares. *SIAM Journal on Matrix Analysis and Applications*, 26(4):1083–1099, 2005.
4. I. Markovsky and B. De Moor. Linear dynamic filtering with noisy input and output. *Automatica*, 41(1): 167–171, 2005.
5. I. Markovsky, J. C. Willems, P. Rapisarda, and B. De Moor. Algorithms for deterministic balanced subspace identification. *Automatica*, 41(1):167–171, 2005.
6. I. Markovsky and S. Van Huffel. High-performance numerical algorithms and software for structured total least squares. *Journal of Comput. and Applied Mathematics*, 180(2):311–331, 2005.
7. I. Markovsky, J. C. Willems, S. Van Huffel, B. De Moor, and R. Pintelon. Application of structured total least squares for system identification and model reduction. *IEEE Trans. on Aut. Control*, 50(10):1490–1500, 2005.
8. I. Markovsky, and S. Van Huffel. Overview of total least squares methods. *Signal Processing*, 87(10):2283–2302, 2007.
9. I. Markovsky. Structured low-rank approximation and its applications. *Automatica*, 44:891–909, 2008.
10. I. Markovsky and P. Rapisarda. Data-driven simulation and control. *Int. J. Control*, 81:1946–1959, 2008.
11. I. Markovsky and S. Mahmoodi. Least squares contour alignment. *IEEE Signal Proc. Letters*, 16(1):41–44, 2009.
12. I. Markovsky and M. Niranjan. Approximate low-rank factorization with structured factors. *Computational Statistics and Data Analysis*, 54:3411–3420, 2010.
13. I. Markovsky. Closed-loop data-driven simulation. *Int. J. Control*, 83(10):2134–2139, 2010.