

Curriculum Vitae

Dino Sejdinović

Contact information

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Employment

12/2009 – **Brunel Fellow - Postdoctoral Research Associate in Statistics**

Department of Mathematics
University of Bristol, UK

The post is funded by SuSTaIn (Statistics underpinning Science, Technology and Industry) strategic initiative at the University of Bristol. I conduct self-directed research at the interface between statistical methodology, computing and information theory. My work focuses on the development and analysis of probabilistic algorithms applicable to the computational problems arising in wireless communications, statistical signal processing, and life sciences. I am particularly interested in approximate inference in graphical models and sparse estimation.

Education

10/2006 – **PhD in Electrical and Electronic Engineering**

12/2009 Centre for Communications Research
Department of Electrical and Electronic Engineering
University of Bristol, UK

Thesis title: *Topics in Fountain Coding*

Advisors: Dr R. Piechocki, Dr A. Doufexi

PhD research project on sparse graph coding theoretic problems in wireless communications was fully sponsored by Toshiba Research Europe Ltd, and partly based at the Toshiba Telecommunications Research Laboratory in Bristol, UK.

10/2003 – **Diplom in Mathematics and Theoretical Computer Science**

09/2006 Department of Mathematics
University of Sarajevo, Bosnia and Herzegovina

Thesis title: *Some properties of zeta functions*

Advisors: Prof M. Avdispahic

Nine-semester National Diplom curriculum with concentration on mathematical foundations of computing. Graduated in September 2006, after less than 3 years of study with the grade average 10.0/10.0, as the most successful student (valedictorian) of the '07 class at the University of Sarajevo.

Teaching Experience

University of Bristol:

- Instructor, *Graphical Models and Complex Stochastic Systems* (2010/11) - module at the doctoral training centre Bristol Centre for Complexity Sciences
- Tutorials, *Linear Algebra and Geometry* (2010/11), *Probability I* (2010/11), *Statistics I* (2010/11), *Analysis I* (2009/10), *Further Topics in Analysis* (2009/10)
- Laboratory demonstrator, *Computing* (2008/09), *Software Engineering* (2007/08, 2008/09)

University of Sarajevo:

- Demonstrator, *Mathematical Analysis / Analysis I* (2005/06)

Funding

07/2010 – (£49,903) *Efficient entropy-based detection of change-points in streaming data*

12/2010 (as researcher co-investigator) with O. Johnson (PI), C. Andrieu, J. Cruise, A. Ganesh and R. Piechocki; funded by the Ministry of Defence - Underpinning Defence Mathematics

07/2010 – (£750) *Bristol, Bath & Oxford Exchange and Networking Programme for Early-Career*

12/2010 *Research Staff in Statistics*

with S. Liverani; funded by the University of Bristol Research Staff Project Fund

06/2010 (£500) Junior Member Travel Grant

funded by the Isaac Newton Institute for Mathematical Sciences, Cambridge

04/2010 – (£10,000) *Algorithmic and information theoretic perspectives of compressed sensing*

03/2011 *in genotyping*

(as PI) with R. Piechocki, O. Johnson, G. Barker and J. McGeehan; funded by the EPSRC through the Cross-Disciplinary Feasibility Account at the University of Bristol

05/2006 (€920) BiCi-UNESCO Travel Grant

funded by the Bertinoro International Center for Informatics (BiCi), Bertinoro, Italy, and the UNESCO Regional Bureau for Science in Europe, Venice, Italy

Honours and Awards

- PhD research thesis nominated for the Research Thesis Prize at the Faculty of Engineering, University of Bristol (2009)
- Best Poster Award at the Toshiba Research Europe Open PhD Day (2008).
- Toshiba Research Europe Ltd PhD Studentship (2006 – 2009).
- The Most Successful Student of the '07 Class at the University of Sarajevo (2007).
- The Most Successful Student of the '07 Class at the Faculty of Science, University of Sarajevo (2007).

- Golden Badge of the University of Sarajevo (2007).
- Ministry of Education Scholarship - Sarajevo Canton, Bosnia and Herzegovina (2004/05, 2005/06, 2006/07).
- Silver Medal at the 8th Bosnian-Herzegovinian Mathematical Olympiad (2003).
- Participated in the International Mathematics Olympiad - IMO 2003 and in the International Physics Olympiad - IPhO 2003.
- Silver Medal at the 45th Michigan Mathematics Prize Competition (2002).
- Soros Open Society student exchange scholarship to spend a year at Cranbrook Schools, Bloomfield Hills, MI (2001/02).

Professional service

- Served as a reviewer for:
IEEE Transactions on Information Theory, IEEE Transactions on Communications, IEEE Transactions on Wireless Communications, IEEE Transactions on Multimedia, IET Communications, Journal of Visual Communication and Image Representation, IEEE International Symposium on Information Theory (ISIT), IEEE International Conference on Communications (ICC), IEEE Wireless Communications and Networking Conference (WCNC), IEEE International Symposium on Wireless Communication Systems (ISWCS), IEEE Vehicular Technology Conference (VTC), Canadian Workshop on Information Theory, IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), Military Communications Conference (MILCOM), Queen's Biennial Symposium on Communications (QBSC).
- Served as a Technical Program Committee member for *IEEE Wireless Communications and Networking Conference (WCNC) 2011*.
- Co-organised the seminar series for the early career researchers in statistics at the Universities of Bristol, Bath and Oxford (2010/2011).
- Organised weekly meetings of the cross-departmental reading group on Information & Communications Theory at the University of Bristol (since 2009).
- Served as a grader for *The Trends in International Mathematics and Science Study TIMSS*, Federal Standards and Assessment Agency, Sarajevo, Bosnia and Herzegovina (2006).

Oral presentations

(a) Seminars:

- 02/2011 Hausdorff Center for Mathematics, University of Bonn
- 12/2010 Department of Statistics, University of Oxford
- 02/2010 Department of Mathematics, University of Bristol
- 08/2009 Toshiba Research Europe Telecommunications Research Laboratory, Bristol
- 11/2008 Centre for Communications Research, University of Bristol
- 07/2006 Department of Mathematics, University of Sarajevo

(b) Invited conference talks:

09/2010 Allerton Conference on Communication, Control and Computing, Monticello, IL, USA

09/2009 International Mobile Multimedia Communications Conference MOBIMEDIA, London, UK

(c) Contributed conference talks:

09/2010 Allerton Conference on Communication, Control and Computing, Monticello, IL, USA

06/2009 IEEE Information Theory Workshop ITW, Volos, Greece

05/2008 IEEE International Conference on Communications ICC, Beijing, China

04/2008 IEEE Wireless Communications and Networking Conference WCNC, Las Vegas, NV, USA

03/2007 IEEE Winterschool on Coding and Information Theory, La Colle Sur Loup, France

(d) Posters:

06/2010 Workshop on Sparse Structures: Statistical Theory and Practice, Bristol, UK

06/2008 Toshiba Research Europe Open PhD Day, Bristol, UK

11/2007 Asilomar Conference On Signals, Systems and Computers, Pacific Grove, CA, USA

Publications

(a) Journal Papers:

1. D. Sejdinovic, R. Piechocki, A. Doufexi, M. Ismail. Decentralised distributed fountain coding: Asymptotic analysis and design, *IEEE Commun. Letters* 14(1), p. 42-44, Jan. 2010.
2. D. Sejdinovic, R. Piechocki, A. Doufexi, M. Ismail. Fountain code design for data multicast with side information, *IEEE Trans. Wireless Commun.* 8(10), p. 5155-5165, Oct. 2009.
3. D. Vukobratovic, V. Stankovic, D. Sejdinovic, L. Stankovic, Z. Xiong. Expanding window fountain codes for scalable video multicast, *IEEE Trans. Multimedia* 11(6), p. 1094-1104, Oct. 2009.
4. D. Sejdinovic, D. Vukobratovic, A. Doufexi, V. Senk, R. Piechocki. Expanding window fountain codes for unequal error protection, *IEEE Trans. Commun.* 57(9), p. 2510-2516, Sept. 2009.

(b) Conference Proceedings:

5. W. Dai, D. Sejdinovic, O. Milenkovic. Gaussian dynamic compressive sensing, *Proc. Int'l Conf. on Sampling Theory and Applications SampTA*, Singapore, May 2011 (invited paper).
6. D. Sejdinovic, C. Andrieu, R. Piechocki. Bayesian sequential compressed sensing in sparse dynamical systems, *Proc. Allerton Conf. on Commun., Control and Computing*, Monticello, IL, USA, Sept. 2010 (invited paper).
7. D. Sejdinovic, O. Johnson. Note on noisy group testing: asymptotic bounds and belief propagation reconstruction, *Proc. Allerton Conf. on Commun., Control and Computing*, Monticello, IL, USA, Sept. 2010.

8. D. Sejdinovic, R. Piechocki, A. Doufexi. Rateless distributed source code design, *Proc. Int'l Mobile Multimedia Commun. Conf. MOBIMEDIA*, London, UK, Sept. 2009 (invited paper).
9. D. Vukobratovic, V. Stankovic, L. Stankovic, D. Sejdinovic. Precoded EWF codes for unequal error protection of scalable video, *Proc. Int'l Mobile Multimedia Commun. Conf. MOBIMEDIA*, London, UK, Sept. 2009.
10. D. Sejdinovic, R. Piechocki, A. Doufexi. And-Or tree analysis of distributed LT codes, *Proc. IEEE Information Theory Workshop ITW*, Volos, Greece, p. 261-265, June 2009.
11. D. Sejdinovic, R. Piechocki, A. Doufexi, M. Ismail. Rate adaptive binary erasure quantization with dual fountain codes, *Proc. IEEE Global Commun. Conf. GLOBECOM*, p. 1203-1207, New Orleans, LA, USA, Dec. 2008.
12. D. Vukobratovic, V. Stankovic, D. Sejdinovic, L. Stankovic, Z. Xiong. Expanding window fountain codes for scalable video multicast, *6th COST 2100 MCM*, Lille, France, Oct. 2008.
13. D. Vukobratovic, V. Stankovic, D. Sejdinovic, L. Stankovic, Z. Xiong. Expanding window fountain codes for scalable video multicast, *Proc. IEEE Int'l Conf. on Multimedia & Expo ICME*, Hanover, Germany, June 2008.
14. D. Sejdinovic, R. Piechocki, A. Doufexi, M. Ismail. Fountain coding with decoder side information, *Proc. IEEE Int'l Conf. on Commun. ICC*, p. 4477- 4482, Beijing, China, May 2008.
15. D. Sejdinovic, V. Ponnampalam, R. Piechocki, A. Doufexi. The throughput analysis of different IR-HARQ schemes based on fountain codes, *Proc. IEEE Wireless Commun. and Networking Conf. WCNC*, p. 267-272, Las Vegas, NV, USA, Apr. 2008.
16. D. Sejdinovic, D. Vukobratovic, A. Doufexi, V. Senk, R. Piechocki. Expanding window fountain codes for unequal error protection, *Proc. Asilomar Conf. on Signals, Systems and Computers*, p. 1020–1024, Pacific Grove, CA, USA, Nov. 2007.
17. D. Vukobratovic, V. Stankovic, D. Sejdinovic, L. Stankovic, Z. Xiong. Scalable data multicast using expanding window fountain codes, *Proc. Allerton Conf. on Commun., Control and Computing*, Monticello, IL, USA, Sept. 2007.

(c) Conference Abstracts:

18. D. Sejdinovic. Message passing algorithms in coding and information theory, *Workshop on Sparse Structures: Statistical Theory and Practice*, Bristol, UK, June 2010.
19. D. Sejdinovic, R. Piechocki, A. Doufexi. Note on systematic Raptor design, *Proc. IEEE Winterschool on Coding and Information Theory*, La Colle Sur Loup, France, Mar. 2007.

(d) Theses:

20. D. Sejdinovic. Topics in fountain coding, PhD Thesis, University of Bristol, 2009.
21. D. Sejdinović. Neka svojstva zeta funkcija (Some properties of zeta functions), Diplom Thesis, University of Sarajevo, 2006.

(e) Miscellanea:

22. D. Sejdinović, I. Tanović. O harmonijskom redu i njegovim dijelovima, *Osječki matematički list (Croatia)* 9(1), (2009), p. 31-39.
23. D. Sejdinovic. Mathematics of the human-vampire conflict, *Math Horizons* 16(2), (2008), p. 14-15.
24. D. Sejdinović. Algoritam i algoritamska rešljivost, *Sigma (FYROM)* 79 (2007/2008), p. 8-19.
25. D. Sejdinović. Quine: samoreproducirajući kod, *Matematičko-fizički list (Croatia)* 58(1), (2007/2008), p. 24-26.
26. D. Sejdinović. Quine: samoreprodukujući kod, *Tangentia (Serbia)* 46(2), (2006), p. 17-18.
27. D. Sejdinović. Eliptičke krivulje u kriptografiji, *Osječki matematički list (Croatia)* 6(2), (2006), p. 85-97.
28. D. Sejdinović, A. Kopic. O Oberwolfach problemu, *Hrvatski matematički elektronski časopis math.e (Croatia)* 7, (2006).

Personal information

Nationality: Bosnia and Herzegovina
Year of birth: 1984