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| CONTACT INFORMATION | National Institute of R&D for Biological Sciences 296 Independenței Bd., District 6, 060031 Bucharest – Romania tel: +40(0)21-220.77.80 email: alexandru.amarioarei@incdsb.ro web: alexamarioarei.appspot.com |
| RESEARCH INTERESTS | Scan statistics, distribution of runs and patterns, Monte Carlo methods, scientific computing |
| EDUCATION | University of Science and Technologies , Lille, France 2010–2014 Ph.D., <i>Defended</i> : September 2014 <ul style="list-style-type: none"> • Thesis: <i>Approximations for Multidimensional Discrete Scan Statistics</i> • Advisor: Cristian Preda, Ph.D • Rapporteurs: Joseph Glaz, Claude Lefèvre • Examiners: Stéphane Robin (President), Azzouz Dermoune, George Haiman, Manuela Sidoroff University of Bucharest , Bucharest, Romania Master of Science (Applied Mathematics), 2008–2010 <ul style="list-style-type: none"> • Topic: <i>Markov chains with applications in biology</i> (in romanian) • Advisor: Ioan Cuculescu Bachelor Degree (Mathematics), 2004–2008 <ul style="list-style-type: none"> • Topic: <i>Semi-riemannian concepts</i> (in romanian) • Advisor: Ianus Stere |
| WORK EXPERIENCE | Researcher 2015–2016 Division of Bioinformatics, National Institute of R&D for Biological Sciences, Bucharest, Romania Teaching Assistant 2013–2015 Software Engineering and Statistics Department, Polytech'Lille Research Assistant 2010–2015 MØdels for Data Analysis and Learning Team, INRIA Nord Europe, Lille Research Assistant 2010–2014 Paul Painlevé Laboratory, Probability and Statistics Department, University of Science and Technologies, Lille Research Assistant 2009–2010 Division of Bioinformatics, National Institute of R&D for Biological Sciences, Bucharest, Romania |
| TEACHING ACTIVITIES | Teaching Assistant at Polytech'Lille, France 2014–2015 <ul style="list-style-type: none"> • Calculus I • Introduction to Probability (R) • Inferential Statistics (SAS + R) • Markov Chains (R - projects) • Numerical Analysis for Engineers (Matlab) |

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| Teaching Assistant at Polytech'Lille, France | 2013–2014 |
| <ul style="list-style-type: none"> • Calculus I • Calculus II • Introduction to Probability (R) • Inferential Statistics (SAS + R) | |
| Instructor at the Department of Mathematics, University of Bucharest | 2009–2010 |
| <ul style="list-style-type: none"> • Formal languages | |
| Instructor at Gh. Sincai Collegium, Bucharest, Romania | 2008–2009 |
| <ul style="list-style-type: none"> • Mathematical classes (lyceum level - preparation for the Baccalaurèat exam) | |

REFEREED JOURNAL PUBLICATIONS

1. **A. Amărioarei**, C. Preda (2015), Approximation for the distribution of three-dimensional discrete scan statistics, *Methodology and Computing in Applied Probability, Volume 17, Issue 3, pag. 565-578*
2. **A. Amărioarei**, C. Preda (2014), Approximation for two-dimensional discrete scan statistics in some block-factor type dependent models, *Journal of Statistical Planning and Inference, Vol. 151-152, pag. 107-120*
3. **A. Amărioarei**, M. Sidoroff (2009), A first step in scan statistics, *Romanian Biological Science Vol. VII, Nr.1-4*
4. J. Jack, M. Sidoroff, I. Stanciu, **A. Amărioarei**, V. Boscaiu, S. Popescu, M. Ciucu, A. Paun (2009), Modeling of Biochemical Signaling with the Memory NWT algorithm, *Romanian Biological Science Vol. VII, Nr. 1-4*

REFEREED CONFERENCE PUBLICATIONS

1. **A. Amărioarei**, C. Preda (2013), Approximation for two-dimensional discrete scan statistics in some dependent models, In *Proceedings of 15th Conference of the Applied Stochastic Models and Data Analysis (ASMDA) International Society*, Barcelona, Spain, June 2013.

PRE- PUBLICATIONS

1. M. Păun, **A. Amărioarei**, M. Sidoroff, M. Paraschiv (2016), Measuring funded research performance for multidisciplinary research in the Danube Delta.
2. **A. Amărioarei** (2012), Approximation for the distribution of extremes of 1 dependent stationary sequences of random variables.

PAPERS IN PREPARATION

1. **A. Amărioarei**, Approximations for the distribution of the longest monotone runs based on a scan statistic approach.
2. **A. Amărioarei**, C. Preda, Approximations for multidimensional continuous scan statistics over Poisson processes.

CONFERENCE PRESENTATIONS

1. **A. Amărioarei**, C. Preda (2015), Scan statistics for some dependent models. Applications, *The 16th Conference of the Applied Stochastic Models and Data Analysis (ASMDA) International Society*, Athens, Greece, July 2015.
2. **A. Amărioarei** (2015), Approximations for the length of the longest monotone run in a sequence of i.i.d. r.v.'s, *The 18th Conference of Romanian Society of Statistics and Probability* Bucharest, May 2015.
3. **A. Amărioarei**, C. Preda (2014), Survey on approximation methods for scan statistics: a software illustration, *7th International Workshop on Applied Probability (IWAP2014)*, Antalya, Turkey, June 2014.
4. C. Preda, **A. Amărioarei**, M. Genin (2014), Two dimensional discrete scan statistics with arbitrary scanning window, *7th International Workshop on Applied Probability (IWAP2014)*, Antalya, Turkey, June 2014.

5. C. Preda, **A. Amărioarei** (2014), Approximation for the scan statistics distribution of a three dimensional Poisson process, *7th International Workshop on Applied Probability (IWAP2014)*, Antalya, Turkey, June 2014.
6. **A. Amărioarei** (2014), Efficient simulation methods for scan statistics: a comparison study, *The 17th Conference of Romanian Society of Statistics and Probability* Bucharest, April 2014.
7. **A. Amărioarei**, C. Preda (2013), Approximation for two-dimensional discrete scan statistics in some block-factor dependent models, *IMS-China International Conference on Statistics and Probability*, Chengdu, China, June 2013.
8. **A. Amărioarei**, C. Preda (2013), Approximation for two-dimensional discrete scan statistics in some dependent models, *The 16th Conference of Romanian Society of Statistics and Probability* Bucharest, April 2013.
9. **A. Amărioarei**, C. Preda (2012), Approximations for the three-dimensional discrete scan statistics, *International Workshop on Applied Probability*, Jerusalem, Israel, June 2012.
10. **A. Amărioarei**, C. Preda (2012), Approximations for the three-dimensional discrete scan statistics, *The 15th Conference of Romanian Society of Statistics and Probability* Bucharest, April 2012.
11. **A. Amărioarei**, C. Preda (2011), Approximations for the three-dimensional discrete scan statistics, *International Conference on Advances in Probability and Statistics - Theory and Applications*, Hong Kong, SAR China, December 2011. (in the honor of N. Balakrishnan).
12. **A. Amărioarei** (2011), The Markov Chain Imbedding Technique-Applications to Scan Statistics, *The 14th Conference of Romanian Society of Statistics and Probability*, Bucharest, April 2011.

SEMINARS

1. **A. Amărioarei** (2015), Approximations for the distribution of scan statistics and applications, *Séminaire de Statistique, IRMA*, Strasbourg, February 2015.
2. **A. Amărioarei** (2014), Scan Statistics: Theory and Applications, *Séminaire de Probabilité et Statistique du Laboratoire de Mathématiques Paul Painlevé*, Lille, March 2014.
3. **A. Amărioarei** (2014), Approximations for One and Two Dimensional Scan Statistics with Applications, *Statistics for System Biology Seminar*, Paris, November 2014.
4. **A. Amărioarei** (2012), Approximations for the Distribution of the Three Dimensional Scan Statistics, *MODAL's Days Seminar*, Albiez, January 2012.

POSTERS

1. E. Târnoveanu, A. Ursu, P. Ichim, **A. Amărioarei** (2015), Ethological study of the rook (*Corvus frugilegus* L.) in Iași metropolitan area and its ecological requirements assessment, *International Zoological Congress of "Grigore Antipa" Museum*, Bucharest, November 2015.
2. **A. Amărioarei**, M. Genin, C. Gower, C. Preda, M. Sidoroff (2014), Detecting Crohn's disease clusters using spatial scan statistics, *Symposium on Modern Biotechnological Advances for Human Health*, Bucharest, May 2014.

SOFTWARE

1. **Scan Statistics Simulator**: a graphical user interface implemented in Matlab that permits to estimate the distribution of the discrete scan statistics in one, two and three dimensions for different distribution models of the underlying random field (Bernoulli, binomial, Poisson, Gaussian and Moving averages of order q).

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| ORGANISATIONAL SKILLS | 1. Co-chair of the IUBMB Symposium on Modern Biotechnologies in Sustainable Development of the Danube Delta, May 31 – June 2, 2016, Murighiol, Romania |
| RESEARCH PROJECTS PARTICIPATION | <ol style="list-style-type: none"> 1. 2010, Participation at the creation and proposal of the Project MedPlaNet (financed project \approx 1.5 million €) 2. 2010, Project BIOSIS 62-056/2008-<i>Bioinformatics system for protein conformation analysis</i> 3. 2009-2010, Kernel Project <i>BIODIV</i> 4. 2009-2010, National Research Plan II, Contract no. 11-066/2007-<i>Simulation of cells using Membrane Systems</i> |
| INTERNATIONAL MOBILITY | 1. ICGEB: Bioinformatics Course, Trieste, Italy (June 2010) |
| COMPUTER PROGRAMMING SKILLS | MATLAB, R, MAPLE, MATHEMATICA, LATEX, TIKZ |
| REFERENCES | <p>Joseph Glaz Department of Statistics, University of Connecticut email: joseph.glaz@uconn.edu</p> <p>Claude Lefèvre Department of Mathematics, Université Libre de Bruxelles email: clefevre@ulb.ac.be</p> <p>Cristian Preda Professor of statistics, Polytech'Lille email: cristian.preda@polytech-lille.fr</p> |