

Dana VRAJITORU

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Education

Doctor of Science in Computer Science University of Neuchâtel, Switzerland, December 1997. Title: *Apprentissage en recherche d'informations (Learning in Information Retrieval)*.

Diploma in Computer Science University of Neuchâtel, Switzerland, 1994.

Diploma in Computer Science University of Iasi, Romania, 1993.

Academic Positions

2007-present Associate professor, IUSB, Computer and Information Sciences Department.

2001-2007 Assistant professor, IUSB, Computer and Information Sciences Department.

1998 – 2000 Postdoc, Chair of Applied Analysis, Department of Mathematics, EPFL, Lausanne, Switzerland.

1994 - 1997 FNRS Doctoral Fellow, Swiss National Science Foundation doctoral fellow under grant 20-43'217.95, Computer Science Department, University of Neuchâtel, Switzerland.

1993 - 1998 Assistant, Computer Science Department, University of Neuchâtel, Switzerland.

Teaching Experience

C101	Computer Programming I
C151	Multi-User Operating Systems
C201	Computer Programming II
C243	Data Structures
C251	Foundations of Digital Computing
C455/B503	Algorithms Analysis
C481/B581	Interactive Computer Graphics
B424/B524	Parallel and Distributed Programming
B582	Image Synthesis
B583/C490	Game Programming and Design
B551/C463	Artificial Intelligence

A106	Introduction to Computing
A201	Introduction to Programming 1
I310	Multimedia Arts and Technology

Grants

IUSB UCET SEED Grant, supplemental grant for purchasing a laptop, \$549, 2014.

IUSB UCET Distance Learning Development for the course C151 Multiuser Operating Systems, \$3000, 2011.

IUSB Faculty Research Grant for the project *Consistent Graph Layouts by Hybrid Genetic Algorithms*, \$8000.00, 2004.

IUSB Curriculum Development Grant for *B424 Parallel and Distributed Programming*, \$3000.00, 2002.

Refereed Publications

D. Vrajitoru (2019): Genetic Algorithms in Trajectory Optimization for Car Races. *In Proceedings of the ISTES International Conference on Engineering, Science, and Technology (ICONEST'19)*, Denver, Colorado, October 7-10, pp 1-10.

D. Vrajitoru (2019): Trajectory optimization for car races using genetic algorithms. *In Proceedings of the Genetic and Evolutionary Computations Conference*, Prague, July, Companion Volume, pp 85-86.

D. Vrajitoru (2018): Global to Local for Path Decision using Neural Networks. *In Proceeding of the Pattern Recognition and Artificial Intelligence Conference (PRAI)*, ACM International Conference Proceedings Series, August 15-17, Union, NJ, pp. 117-123.

D. Vrajitoru (2017): Growth Rates in Algorithm Complexity: the Missing Link. *In International Journal of Engineering And Computer Science*, Vol 6, Issue 11, November 2017, 23089-23094.

D. Vrajitoru, K. Albelihi (2016): Noise and Error Prediction for Neural Networks. *In Proceedings of the 18th International Conference on Artificial Intelligence*, July 25-28, Las Vegas, NV, pp 342-348.

D. Vrajitoru, P. Toprac (2016): Games Programming in Computer Science Education. *In Proceedings of the 12th International Conference on Frontiers in Education: Computer Science and Computer Engineering (FECS'16)*, July 25-28, Las Vegas, NV, pp 10-14.

D. Vrajitoru (2015): A Pattern-Based Bayesian Network for the Game of Nine Men's Morris. *Foundations of Digital Games Conference*, June 22-25, Pacific Grove, CA, p. 29.

K. Albelihi, D. Vrajitoru (2015): An Application of Neural Networks to an Autonomous Car Driver. *The 17th International Conference on Artificial Intelligence*, July 27-30, Las Vegas, pp 716-722.

D. Vrajitoru (2012): Genotype Division for Shared Memory Parallel Genetic Algorithm Across Platforms and Systems. In American Journal of Intelligent Systems, Vol.2, No.4, July 2012.

D. Vrajitoru (2012): Connecting Stage Objects and Custom Classes in ActionScript 3.0. *Game Coder Magazine*, April 2012, 48-52.

D. Vrajitoru, W. Knight (2012): On the Optimality of a Family of Binary Trees. In Proceedings of The 8th International Conference on Foundations of Computer Science (FCS'12), July 16-19, Las Vegas, USA. Part of the The 2012 World Congress in Computer Science, Computer Engineering, and Applied Computing.

D. Vrajitoru (2010): Shared Memory Genetic Algorithms in a Multi-Agent Context. In Proceedings of the Genetic and Evolutionary Computation Conference (GECCO 2010), ACM SIGEVO, July 7-12, Portland, OR, 1097-1104. Nominated for the Best Paper Award in the section Parallel Evolutionary Systems.

D. Vrajitoru (2010): Asynchronous Multi-Threaded Model for Genetic Algorithms. In Proceedings of the Midwest Artificial Intelligence and Cognitive Science Conference, Indiana University South Bend, South Bend, IN, 44-50.

C. Guse, D. Vrajitoru (2010): The Epic Adaptive Car Pilot. In Proceedings of the Midwest Artificial Intelligence and Cognitive Science Conference, Indiana University South Bend, South Bend, IN, 30-35.

C. Guse, D. Vrajitoru (2009): The Three-Headed Monster: An Evolutionary Program. Proceedings of the Midwest Artificial Intelligence and Cognitive Science Conference, April 18-19, Fort Wayne, IN, 40-45.

D. Vrajitoru (2009): Multiobjective Genetic Algorithm for a Graph Drawing Problem. Proceedings of the Midwest Artificial Intelligence and Cognitive Science Conference, April 18-19, Fort Wayne, IN, 28-43.

D. Vrajitoru (2008): Natural Selection and Mating Constraints with Genetic Algorithms. *International Journal of Modeling and Simulation*, Vol. 28, nr. 2, 188-194.

D. Vrajitoru, P. Konnanur, and R. Mehler (2008): Genetic Algorithms for a Single-Track Vehicle Autonomous Pilot. *Control and Intelligent Systems*, Vol. 36, nr. 1, 38-47.

D. Vrajitoru (2007): Hybrid Multiobjective Optimization Genetic Algorithms for Graph Drawing. Proceeding of the Genetic and Evolutionary Computation Conference (GECCO'07), University College London, UK, 912.

D. Vrajitoru (2007): Competitive Coevolution versus Objective Fitness for an Autonomous Motorcycle Pilot. Proceeding of the IEEE Electro/Information Technology Conference (EIT 2007), May 17-20, Chicago, IL, 642-647.

D. Vrajitoru (2007): Facet Detection and Visualization of Local Structure in Graphs. Proceedings of the IASTED Conference on Graphics and Visualization in Engineering (GVE'07), January 3-5, Clearwater, Florida, 89-94.

D. Vrajitoru, B. El-Gamil (2006): Genetic Algorithms for Graph Layouts with Geometric Constraints. Proceedings of the IASTED Conference on Computational Intelligence (CI'06), San Francisco, November 20-22, 64-69.

- D. Vrajitoru (2006): NPCs and Chatterbots with Personality and Emotional Response. In the IEEE Symposium on Computational Intelligence and Games (CIG 2006), Reno/Lake Tahoe, May 22-24, 142-147.
- H. Rababaah, J. Wolfer, D. Vrajitoru (2005): Asphalt Pavement Crack Classification: a Comparison of GA, MLP, and SOM. *Proceeding of the Genetic and Evolutionary Computation Conference (GECCO'05 and SIGEVO 1)*, Washington, DC, June25-29, 2005, late breaking papers.
- D. Vrajitoru, J. DeBoni (2005): Hybrid Real-Coded Mutation for Genetic Algorithms Applied to Graph Layouts. *Proceeding of the Genetic and Evolutionary Computation Conference (GECCO'05 and SIGEVO 1)*, Washington, DC, June25-29, 2005, 1563-1564.
- D. Vrajitoru, R. Mehler (2005): Multi-Agent Autonomous Pilot for Single-Track Vehicles. *Proceedings of the IASTED Conference on Modeling and Simulation*, Oranjestad, Aruba, August 29-31, 2005, 85-90.
- D. Vrajitoru, J. DeBoni (2005): Consistent Graph Layout for Weighted Graphs. Presented at the *The 3rd ACS/IEEE International Conference on Computer Systems and Applications*, January 3-5, 2005, Cairo, Egypt.
- D. Vrajitoru, R. Mehler (2004): Multi-Agent Autonomous Pilot for Motorcycles. *IEEE Region 4 Electro/Information Technology Conference (EIT2004)*.
- D. Vrajitoru, J. DeBoni (2004): Consistent Weighted Graph Layouts. *Graph Theory 2004*, poster presentation, Paris, July 5-9, 2004, 93-94.
- D. Vrajitoru (2004): Intra and Extra-Generation Schemes for Combining Crossover Operators. *Midwest Artificial Intelligence and Cognitive Science Conference 2004*, 86-91.
- D. Vrajitoru, J. Ratkiewicz (2004): Evolutionary Sentence Combination for Chatterbots. *The IASTED International Conference on Artificial Intelligence and Applications (AIA 2004)*, Innsbruck, Austria, February 16-18, ACTA Press, 287-292.
- D. Vrajitoru (2003): Evolutionary Sentence Building for Chatterbots. *GECCO 2003*, Late Breaking Papers, 315-321.
- R. Paffenroth, D. Vrajitoru, T. Stone, and J. H. Maddocks (2002): DataViewer: A Scene Graph Based Visualization Library. *The 5th IASTED Conference on Computer Graphics and Imaging (CGIM 2002)*, ACTA Press, 200-205.
- D. Vrajitoru (2002): Simulating Gender Separation with Genetic Algorithms. *Genetic and Evolutionary Computation Conference 2002*, Morgan Kaufmann Publishers, 634-641.
- R. Paffenroth, D. Vrajitoru, T. Stone, and J. H. Maddocks (2002): DataViewer: A Scene Graph Based Visualization Tool. *The 20th Eurographics UK Conference*, IEEE Computer Society Publications, 147-148.
- D. Vrajitoru (2001): Parallel Genetic Algorithms Based on Coevolution. *Genetic and Evolutionary Computation Conference 2001*, Late Breaking Papers, 450-457.
- D. Vrajitoru (2001): Nested Genetic Algorithms with Problem Division. *Genetic and Evolutionary Computation Conference 2001*, 787.

D. Vrajitoru (1999): Genetic Programming Operators Applied to Genetic Algorithms. *Genetic and Evolutionary Computation Conference 99*, 686-693.

D. Vrajitoru (1998): Crossover Improvement For The Genetic Algorithm In Information Retrieval. *Information Processing and Management* , 34(4), 405-415.

D. Vrajitoru (1997): Genetic Algorithms in Information Retrieval. *AIDRI97: Learning: From Natural Principles to Artificial Methods.* , Geneva, Switzerland, June 1997.

J. Savoy, A. Le Calvé, D. Vrajitoru (1996): Report on the TREC-5 Experiment: Data Fusion and Collection Fusion. *Proceedings TREC'5*, NIST Publication 500-238, Gaithersburg (MD), 489-502.

J. Savoy, M. Ndarugendamwo, D. Vrajitoru (1995) : Report on the TREC-4 Experiment: Combining Probabilistic and Vector-Space Schemes. *Proceedings TREC'4*, NIST, Gaithersburg (MD), October 1995, 537-547.

J. Savoy, M. Ndarugendamwo, D. Vrajitoru (1994) : Report on the TREC-3 Experiment: A Learning Scheme in a Vector Space Model. *Proceedings TREC'3*, NIST, publication 500-225, Gaithersburg (MD), April 1994, 361-372.

Books

D. Vrajitoru, W. Knight (2014): *Practical Analysis of Algorithms*, Springer.

D. Vrajitoru (2013): *The 2D Games Journey*, Creative Space.

D. Vrajitoru (editor) (2010): *Proceedings of the Midwest Artificial Intelligence and Cognitive Science Conference*, Indiana University South Bend.