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Employment

- February 2004 – present: Research Scientist, National Institute of Aerospace, Hampton, Virginia.

Research interests

- Formal Methods;
- Formal Verification of Safety Critical Systems;
- Symbolic Model Checking;
- Logic and Stochastic Modeling;

Education

- August 1998 - December 2003 : Ph.D. in Computer Science, College of William and Mary, Williamsburg, Virginia. Thesis: “Structural Model Checking”;
- October 1997 - June 1998: M.S. in Computer Science, “Al.I.Cuza” University of Iași, Romania. GPA: 10/10. Thesis: “A New Approach to Deadlock-free Message Routing in Wormhole Networks”;
- October 1992 - June 1997 : undergraduate studies at “Al.I.Cuza” University of Iași, Romania. GPA: 10/10. B.S. in Computer Science, June 1997. Honors project: “Deadlock Detection Techniques in Wormhole Message Routing”.

Honors and Awards

- Recipient of the 2003 *Steven K. Park* Graduate Student Research Award;
- Valedictorian, “Al.I.Cuza” University of Iași, Department of Computer Science, class of 1997;
- Valedictorian, “C.Negruzzi” High School of Iași, class of 1992 (GPA 9.96/10.0).

- First prize, student research section, the National Contest in Computer Science, Craiova, Romania, October 1996;
- First prize, programming team contest, the National Contest in Computer Science, Craiova, Romania, October 1996;
- Second prize, SE European Olympics in Computer Science. Chişinău, Republic of Moldova, May 1994;
- First mention, “Grigore Moisil” National Computer Science Students Forum, Iaşi, Romania, 1994, 1995, and 1996;

Scholarships, Fellowships and Grants

- August 2003 - December 2003: Teaching Fellowship, College of William and Mary;
- January 1998 - August 2003: Research Assistantship, College of William and Mary;
- July-August, 1999 and 2000: Summer internships at ICASE (Institute for Computer Applications in Science and Engineering), NASA Langley Research Center, Hampton, Virginia;
- August - December 1998: Teaching Assistantship, College of William and Mary;
- October 1992 - June 1997: Romanian National Ministry of Education Fellowship for undergraduate students.

Teaching Experience

- August-December 2003: Teaching Fellow, College of William and Mary: CSci241 (Data Structures);
- August-December 1998: Teaching Assistant, College of William and Mary: CSci243 (Discrete Structures of Computer Science), CSci 321 (Database Systems);
- Jan-Aug 1998: Teaching Fellow, “Al.I.Cuza” University - Iaşi, Romania: Taught the Software Engineering course.

Publications

- Refereed conference papers
 - M.Bolton, E.Bass, and R.Siminiceanu, *Using Formal Methods to predict Human Error and System Failures*, 2nd Int'l Conference, Applied Human Factors and Ergonomics (AHFEI 2008), Las Vegas, July 2008.

- R.Siminiceanu and G.Ciardo, *New Metrics for Static Variable Ordering in Decision Diagrams*, Tools and Algorithms for the Construction and Analysis of Systems (TACAS 2006), Lecture Notes in Computer Science vol. 3920, pp. 90–104, Vienna, Austria, March 2006;
 - J.Ezekiel, G.Lüttgen, and R.Siminiceanu *Can Saturation be Parallelised? On the Parallelisation of a Symbolic State-Space Generator*, Parallel and Distributed Model Checking (PDMC 2006), Bonn, Germany, August 2006.
 - R.Siminiceanu and G.Ciardo, *Formal Verification of the NASA Runway Safety Monitor*, Automated Verification of Critical Systems (AVoCS 2004), Electronic Notes in Computer Science vol. 128 (6), pp. 179–194, London, UK, September 2004;
 - G.Ciardo, R.L.Jones, A.S.Miner, and R.Siminiceanu, *Logical and Stochastic Modeling with SMART*, Performance *TOOLS* 2003, pp.78–97, Urbana, Illinois, September 2003;
 - G.Ciardo and R.Siminiceanu, *Structural Symbolic CTL Model Checking of Asynchronous Systems*, Computer Aided Verification (CAV 2003), LNCS vol. 2725, pp. 40–53, Boulder, Colorado, July 2003;
 - G.Ciardo, R.Marmorstein, and R.Siminiceanu, *Saturation Unbound*, Tools and Algorithms for the Construction and Analysis of Systems (TACAS 2003), LNCS vol.2619, pp. 379–393, Warszawa, Poland, April 2003;
 - G.Ciardo and R.Siminiceanu, *Using Edge-Valued Decision Diagrams for Symbolic Generation of Shortest Paths*, Formal Methods in Computer-Aided Design (FMCAD 2002), LNCS vol. 2517, pp. 256–273, Portland, Oregon, November 2002;
 - G.Ciardo, G.Lüttgen, and R.Siminiceanu, *Saturation: An Efficient Iteration Strategy for Symbolic State-space Generation*, Tools and Algorithms for the Construction and Analysis of Systems (TACAS 2001), LNCS vol.2031, pp. 328–342, Genova, Italy, Apr.2001;
 - G.Ciardo, G.Lüttgen, and R.Siminiceanu, *Efficient Symbolic State-Space Construction for Asynchronous Systems*, International Conference on Theory and Application of Petri Nets (ICATPN 2000), LNCS vol.1825, pp. 103–122;
- Journal papers
 - J.Ezekiel, G.Lüttgen and R.Siminiceanu, *To Parallelise or to Optimise?*, PDMC special edition, submitted March 2008.
 - R.Siminiceanu and G.Ciardo, *Formal Verification of the NASA Runway Safety Monitor*, Special Issue of the International Journal on Software Tools for Technology Transfer (STTT), Vol. 9 (1), pp. 63–76, February 2007;
 - G.Ciardo, R.L.Jones, A.S.Miner, and R.Siminiceanu, *Logical and Stochastic Modeling with SMART*, J. Performance Evaluation, Vol. 63, pp. 578–608;

- G.Ciardo, R.Marmorstein, and R.Siminiceanu, *The Saturation Algorithm for State Space Generation of Asynchronous Systems*, Special Issue of the International Journal on Software Tools for Technology Transfer (STTT), Vol. 8 (1), pp. 4–25;
- Tool & Workshop papers
 - R.Siminiceanu, R.Butler, and C.Muñoz, *Experimental Evaluation of a Planning Language Suitable for Formal Verification*, Model Checking and Artificial Intelligence (MoChArt) 2008, Patras, Greece (to appear).
 - M.Chung, G.Ciardo, and R. Siminiceanu, *Hashing, Caching, and Garbage Collection for Distributed State Space Construction*, Parallel and Distributed Model Checking (PDMC) 2007, Berlin, Germany.
 - G.Ciardo, R.L.Jones, A.S.Miner, R.Marmorstein, and R.Siminiceanu, *SMART: Stochastic Model-checking Analyzer for Reliability and Timing*, IEEE International Computer Performance and Dependability Symposium (IPDS 2002), Urbana-Champaign, Illinois;
 - G.Ciardo, R.L.Jones, A.S.Miner, and R.Siminiceanu, *SMART: Simulation and Markovian Analyzer for Reliability and Timing*, International Multiconference on Measurement, Modeling and Evaluation of Computer-Communication Systems, Aachen, Germany, September 2001;
- Technical Reports
 - A.Galloway, J.T.Mühlberg, G.Lüttgen, and R.Siminiceanu, *Model-checking Part of a Linux File System*, University of York, TR 2007-423.
 - J.Ezekiel, G.Lüttgen, and R.Siminiceanu, *An Anticipated Firing Saturation Algorithm For Shared-Memory Architectures*, University of York, TR 2007-422.
 - R. Butler, R.Siminiceanu, and C.Muñoz, *The ANMLite Language and Logic For Specifying Planning Problems*, NASA Langley Research Center, TM 2007-215088.
 - R.Siminiceanu, *Model Checking Abstract PLEXIL Programs with SMART*, National Institute of Aerospace TR 2007-02, NASA TM 2007-214543.
 - R.Butler, C.Muñoz, and R.Siminiceanu, *Solving the AI Planning + Scheduling Problem Using Model Checking via Automatic Translation from the Abstract Plan Preparation Language APPL to the Symbolic Analysis Laboratory (SAL)*, NASA Langley Research Center, TM 2007-215089.
 - C.Muñoz and R.Siminiceanu, *In-Trail Procedure Algorithm for Enhanced Oceanic Operations*, National Institute of Aerospace Technical Report, 2007-06;
 - M-Y.Chung, G.Ciardo, and R.Siminiceanu *Distributed Saturation*, National Institute of Aerospace Technical Report, 2007-05;
 - J.Ezekiel, G.Lüttgen, and R.Siminiceanu, *A Parallel Saturation Algorithm on Shared Memory Architectures*, National Institute of Aerospace TR 2007-01;

- R.Siminiceanu, *Modeling Checking Abstract PLEXIL Programs with SMART*, National Institute of Aerospace TR 2007-02;
- M.Malekpour and R.Siminiceanu, *Comments on the Byzantine Self-Stabilizing Pulse Synchronization Protocol: Counterexamples*, NASA/TM 2006-213951;
- C.Muñoz, R.Siminiceanu, V.Carreño, G.Dowek, *KB3D Reference Manual*, NASA/TM 2005-213769;
- G.Ciardo, G.Lüttgen, and R.Siminiceanu, *Saturation: An Efficient Iteration Strategy for Symbolic State-space Generation*, Institute for Computer Applications in Science and Engineering (ICASE) TR No. 2001-5, NASA/CR-2001-210663;
- G.Ciardo, G.Lüttgen, and R.Siminiceanu, *Efficient Symbolic State-Space Construction for Asynchronous Systems*, Institute for Computer Applications in Science and Engineering (ICASE) TR No. 99-50, NASA/CR-1999-209827;
- Theses
 - R.Siminiceanu, *Structural Model Checking*, Ph.D. Thesis, College of William and Mary, December 2003;
 - R.Siminiceanu, *A New Approach to Deadlock-Free Wormhole Routing*, M.S. Thesis, University of Iași, Romania, June 1998;
- Miscellanea
 - G.Ciardo, A.S.Miner, R.L.Jones, R.Marmorstein, R.Siminiceanu, *SMART User Manual*, <http://www.cs.em.edu/~ciardo/SMART/>;
 - R.Siminiceanu, *Genetic Algorithms for TSP (Traveling Salesman Problems)*, presented at the Romanian Symposium on Computer Science (RoSyCS '96), Iași, Romania, June 1996.

Journal and Conference Refereeing

- Tools and Algorithms for the Construction and Analysis of Systems (TACAS) 2006.
- Concurrency Theory International Conference (CONCUR) 2006.
- American Institute of Aeronautics and Astronautics (AIAA) Journal of Aerospace Computing, Information, and Communication, 2006.
- International Symposium on Distributed Computing (DISC) 2006.
- Formal Methods in Computer Aided Design (FMCAD) 2004.
- Theorem Proving in Higher Order Logics (TPHOLS) 2004.
- Journal of Information Science and Engineering (JISE) 2004.

- International Conference on the Theory and Applications of Petri Nets (ICATPN) 2000-2003.

Professional Affiliations

- Member, American Institute of Aeronautics and Astronautics (AIAA).