

Gabriel Tanase

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Education

Ph.D. Student in Computer Science, Texas A&M University, 2000 - present

Advisor: Lawrence Rauchwerger.

Co-Advisor: Nancy Amato.

Ph.D. Thesis Topic: *Parallel Containers in STAPL*

Generic infrastructure to support the development of parallel and distributed data structures from existing sequential data structures.

M.S. in Computer Science, Polytechnic University of Bucharest, Romania, 1999-2000

10/10 GPA. Advanced field of study in operating systems, distributed systems and parallel computing. Completed thesis and project on *Parallel Algorithms for STAPL (Standard Template Adaptive Parallel Library)*.

B.S. in Computer Science, Polytechnic University Bucharest, Romania, 1994-1999

9.85/10 GPA. Completed thesis and project on *Adaptive Parallelism using TupleSpace* (received a grade of 10/10).

Research Interests

Parallel languages, libraries and algorithms.

Generic programming.

Experience

Research Assistant, Department of Computer Science, Texas A&M University, September 2000 - present

Working on STAPL (Standard Template Adaptive Parallel Library), a parallel version of C++ STL for distributed and shared memory systems. Responsible for designing a framework for developing **parallel and distributed data structures**.

Working on DOE funded project "Efficient massively parallel implementation of modern deterministic transport calculations" that is developing a parallel code for particle transport simulations in the STAPL infrastructure. Researching parallel algorithms for finding strongly connected components in distributed directed graphs.

Research Intern, IBM Thomas J. Watson Research Center, May 2006 - August 2006.

Worked on Hierarchically Tiled Arrays, a novel parallel data structure to help improve the programmability of multi processor machines.

Teaching Assistant, Department of Computer Science, Polytechnic University of Bucharest, Sept 1999 - June 2000

Helped with laboratory work (Distributed Systems and Parallel Algorithms), teaching and grading. Managed four sections of 20 students each. Taught a lab covering multiprogramming mechanisms and C programming on Unix platforms (Solaris, Linux) for "Operating Systems" course.

Software Engineer (Part Time job), Mediafax (News Company), Bucharest, Romania, March 1999 - March 2000

Developed a server/client application to send and display news.

Student Research Mentoring

Jessie Berlin, junior CS major, Summer 2007.

The student implemented and evaluated parallel sample sort in STAPL.

Chidambareswaran Raman, Master Student, CS major, 2006-2007.

The student implemented parallel associative containers in STAPL.

Tao Huang, Master Student, CS major, 2003-2006.

The student implemented a set of complex parallel algorithms in STAPL.

Anna Tikhonova, senior CS major, CS@TAMU REU Program, Summer 2005.

The student completed the design and implementation of a complex parallel algorithm using STAPL.

Olga Tkachyshyn, senior CS major, CRA-W DMP Program, Summer 2003.

Designed and implemented a parallel array data structure for STAPL. The student is currently a Ph.D. student at Texas A&M and was awarded an NSF Graduate Research Fellowship.

Professional Service and Activities

Referee for HiPC '03, LCPC '03, LCPC '04, PPOPP '05, LCPC '05, ICS '06, IPDPS '06, HIPS '07, ICS '07, IPDPS '07, SC '07, HiPC '07, HiPEAC '07, ICPADS '07, LCS D '07.

Refereed Publications in Conferences and Journals

“Parallel Associative Containers in STAPL”,

Gabriel Tanase, Chidambareswaran Raman, Mauro Bianco, Nancy M. Amato and Lawrence Rauchwerger, accepted at the “20th International Workshop on Languages and Compilers for Parallel Computing”, Urbana, Illinois, Oct 2007 (to appear).

“The STAPL pArray”,

Gabriel Tanase, Mauro Bianco, Nancy M. Amato and Lawrence Rauchwerger, In Proc. of Workshop MEDEA, pp. 81-88, Brasov, Romania, Sept 2007.

“Design and Use of htalib – a Library for Hierarchically Tiled Arrays”,

Ganesh Bikshandi, Jia Guo, Christoph von Praun, Gabriel Tanase, Basilio B. Fraguera, Maria J. Garzaran, David Padua and Lawrence Rauchwerger, accepted at the “19th International Workshop on Languages and Compilers for Parallel Computing”, New Orleans, Louisiana, Nov 2006.

“ARMI: A High Level Communication Library for STAPL”,

N. Thomas, G. Tanase, T. Smith, S. Saunders, and L. Rauchwerger, in Parallel Processing Letters, 16(2):261-280, Jun 2006.

“A Framework for Adaptive Algorithm Selection in STAPL”,

N. Thomas, G. Tanase, O. Tkachyshyn, J. Perdue, N. Amato, and L. Rauchwerger, in Proceedings of the “Symposium on Principles and Practice of Parallel Programming”, pp. 277-288, Chicago, Illinois, Jun 2005, (acceptance ratio: 31%).

“Parallel Protein Folding with STAPL”,

S. Thomas, G. Tanase, L. Dale, J. Moreira, L. Rauchwerger, N. Amato, in Journal of Concurrency and Computation: Practice and Experience, 17(14):1643-1656, Dec 2005.

“STAPL: An Adaptive, Generic Parallel C++ Library”,

P. An, A. Jula, S. Rus, S. Saunders, T. Smith, G. Tanase, N. Thomas, Nancy M. Amato, and L. Rauchwerger, in Proceedings of the “13-th Workshop on Languages and Compilers for Parallel Computing”, Springer Lecture Notes in Computer Science vol 2624, pages 193-208, Cumberland Falls, KY Aug 2001.

“STAPL : A Standard Template Adaptive Parallel C++ Library”,

P. An, A. Jula, S. Rus, S. Saunders, T. Smith, G. Tanase, N. Thomas, Nancy M. Amato, and L. Rauchwerger, in Proceedings of the “International Workshop on Advanced Compiler Technology for High Performance and Embedded Systems”, pages 37-46, Bucharest, Romania, July 2001.

Unrefereed publications, Technical Reports and Posters

“Arrays with Dynamic Hierarchical Tiling and their Applications”,

Gabriel Ilie Tanase, Christoph von Praun, Calin Cascaval, Lawrence Rauchwerger, Poster, IBM T.J. Watson Research Center, Aug 2006.

“Parallel Algorithms in STAPL: Sorting and the Selection Problem”,

Anna Tikhonova, Gabriel Tanase, Olga Tkachyshyn, Nancy M. Amato, Lawrence Rauchwerger, Technical Report, TR05-005, Parasol Laboratory, Department of Computer Science, Texas A&M University, Aug 2005.

“pArray as an efficient static parallel container in STAPL,

Olga Tkachyshyn, Ping An, Gabriel Tanase, Nancy M. Amato, Technical Report, TR03-003, Parasol Laboratory, Department of Computer Science, Texas A&M University, Aug 2003.

“TupleSpace (©IBM) a framework for distributed applications”,

Gabriel Tanase, in “PCReport”, Nr.93, 2000, Romania.

Professional Skills

Programming Languages: Excellent knowledge of C and C++. Proficient with Java (RMI, TupleSpaces), Pascal, Visual C++, Lex, Yacc, JavaCC, SQL, PHP.

Software Libraries and Tools: Excellent knowledge of C++ Standard Template Library(STL), MPI, Posix Threads. Working knowledge of parallel debugging (TotalView), code profiling and instrumentation (PAPI, Valgrind).

Hardware: Experienced user of varied parallel architectures like SGI Origin 3800, SGI Altix 3700, IBM Regatta pSeries 690, IBM SP RS/6000, Cray XT4, IBM Bluegene, Linux Clusters.

Additional Information

Extracurricular: President of the Romanian Club at Texas A&M University

Spoken Languages: English - fluent, Romanian - native speaker.

Work Authorization: Foreign student authorized for curricular practical training (F1 visa).