

Alin Julia

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- Objective** Full-time position in Research and Development of software systems, tools and languages. Available starting May 2008 (US work authorization).
- Education** **Texas A&M University**, College Station, TX August 2008
Ph.D. in Computer Science, GPA 3.8, Advisor: Lawrence Rauchwerger
Thesis: *Improving Locality with Dynamic Memory Allocation*
- Babes-Bolyai University**, Cluj, Romania
M.S. in Computer Science, GPA 9/10 1998
B.S. in Computer Science, GPA 9/10 1997
Additional coursework in Finance, 1996-98
- Experience** **Texas A&M University**, College Station, TX September, 2006 - present
Graduate Student, Department of Computer Science
Designed and implemented memory allocation techniques in C++ that improve an application's execution time an average of 7% and up to 22% over state-of-the-art allocators. Integrated them into C++ Standard Template Library. Resulting method required only an application re-compilation. Designed and implemented a generic memory allocation library.
- Lawrence Livermore National Laboratories**, Livermore, CA July-December, 2004
Intern, CASC
Designed and implemented two program transformation passes in a 800,000 lines of code C++ compiler. A source outliner (reverse of inliner) and a generic program instrumentation tool, both part of a program hot spot optimization project.
- Texas A&M University**, College Station, TX
Research Assistant, Department of Computer Science July, 1999 - September, 2006
Researched, designed and implemented the C++ Standard Template Adaptive Parallel Library (STAPL). Designed and implemented parallel algorithms, containers and task scheduler in STAPL, for both shared (pThreads) and distributed (MPI) memory systems.
- Participated in the DOE ASCI Project - "Efficient massively parallel implementation of modern deterministic transport calculations". Developed and implemented a communication/computation overlapping mechanism and performed locality improving optimizations.
- Lecturer**, Department of Computer Science August - December, 2003
Compiler Design, senior level class. Lectured on lexical analysis, parsing techniques, context sensitive analysis, intermediate representations, procedure abstraction, heap management, code generation, instruction selection, code improvement techniques and optimizations.
- Teaching Assistant**, Department of Computer Science January - May, 1999
Programming in C. Responsible for three sections of 20 students, supervised laboratories, graded projects, tests and other assignments.
- Babes-Bolyai University**, Cluj-Napoca, Romania September - December, 1998
Teaching Assistant, Department of Computer Science
System Analysis and Design. Responsible for four sections of 25 students. Lectured seminars, problem solving sessions, graded projects, tests and other assignments.
- Raiffeisen Bank**, Beclean, Romania June - August, 1997
Intern, Credit Department
Studied the bank's process for financial credit.

- Skills**
- Programming Languages** - Excellent working knowledge of C/C++. Working knowledge of Pascal, Lisp, Matlab, Prolog, Visual Basic, 80-x86 assembly
- Software and Tools** - Excellent working knowledge of C++ Standard Template Library (STL). Working knowledge of MPI, POSIX Threads, OpenMP, UML, CASE instruments, Performance Profiling Tools (PAPI, Tau, Shark), Unix shell, Latex, CVS, Doxygen
- Hardware** - Working knowledge of Linux, Mac OS X, Solaris OS (maintaining and working on PC-Linux workstations, compilation target platform), SGI Origin 2000/3800, SGI Power Challenge, IRIX, HP-V class and HP-UX OS (compilation target platforms)
- Publications**
- Memory Allocation for C++**
Balancing Allocation Speed, Locality and Fragmentation into a Locality Improving Memory Allocator, **Alin Jula** and Lawrence Rauchwerger. Technical Report TR08-002. Department of Computer Science, Texas A&M University, Parasol Lab, College Station, TX 77843-3112, February 2008 [[Abstract](#)] [[Paper](#)]
- How to Focus on Memory Allocation Strategies*, **Alin Jula** and Lawrence Rauchwerger. Technical Report TR07-003. Department of Computer Science, Texas A&M University, Parasol Lab, College Station, TX 77843-3112, June 2007 [[Abstract](#)] [[Paper](#)]
- Custom Memory Allocation for Free*, **Alin Jula** and Lawrence Rauchwerger. In The 19th International Workshop on Languages and Compilers for Parallel Computing (LCPC), November 2-4, 2006, New Orleans, LA. [[Abstract](#)] [[Paper](#)]
- Parallelism**
- SmartApps: An Application Centric Approach to High Performance Computing: Compiler-Assisted Software and Hardware Support for Reduction Operations*, Francis. Dang, Maria Jesus Garzaran, Milos Prvulovic, Ye Zhang, **Alin Jula**, Hao Yu, Nancy Amato, Lawrence Rauchwerger and Josep Torrellas. NSF Next Generation Systems Program Workshop (NSFNGS), in conjunction with the 16th International Parallel and Distributed Processing Symposium (IPDPS), April 15th, 2002, Fort Lauderdale, Florida [[Abstract](#)] [[Paper](#)]
- Architectural Support for Parallel Reductions in Scalable Shared-Memory Multiprocessors*, Maria Jesus Garzaran, Milos Prvulovic, **Alin Jula**, Hao Yu, Ye Zhang, Lawrence Rauchwerger, and Josep Torrellas, International Conference on Parallel Architectures and Compilation Techniques (PACT), September 2001, Barcelona, Spain [[Abstract](#)] [[Paper](#)]
- STAPL: an Adaptive Generic Parallel C++ Library*, Ping An, **Alin Jula**, Silviu Rus, Steve Saunders, Tim Smith, Gabriel Tanase, Nathan Thomas, Nancy Amato, and Lawrence Rauchwerger. 14th Workshop on Language and Compilers for Parallel Computing (LCPC), August 2001, Kentucky [[Abstract](#)] [[Paper](#)]
- STAPL : a Standard Template Adaptive Parallel C++ Library*, Ping An, **Alin Jula**, Silviu Rus, Steven Saunders, Tim Smith, Gabriel Tanase, Nathan Thomas, Nancy Amato, and Lawrence Rauchwerger, International Workshop on Advanced Compiler Technology for High Performance and Embedded Processors (IWACT), Bucharest, Romania, July 18-21, 2001 [[Abstract](#)] [[Paper](#)]
- Theses**
- Improving Locality with Dynamic Memory Allocation*, **Alin Jula**. Ph.D. Thesis, Texas A&M University, College Station, TX, USA, May 2008
- Persistence in Object-Oriented Systems*, **Alin Jula**. Masters Thesis, Babes-Boylai University, Cluj, Romania, July 1998
- Modeling Information with CASE Instruments*, **Alin Jula**, Bachelors Thesis, Babes-Boylai University, Cluj, Romania, July 1997
- References** Available upon request