CURRICULUM VITAE

Dr. Jan F. Prins

April 2013

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Education

Ph.D.	1987	Computer Science	Cornell University
	1986-87	Programming Languages Group	Univ. of Wisconsin at Madison
	1983-84	Programming Research Group	Oxford University, UK
M.Sc.	1983	Computer Science	Cornell University
B.Sc.	1978	Mathematics (Honors)	Syracuse University

My thesis research was supervised by David Gries at Cornell University and described a framework for reusability and rapid prototyping in program development; my minor concentration was in neurobiology. I was a member of the Programming Research Group at Oxford University during the 1983-84 academic year and spent an undergraduate year in 1977 at the Technische Hogeschool Eindhoven (The Netherlands) with the research group directed by Edsger Dijkstra.

Academic Experience

5/10 –	Research Fellow, Renaissance Computing Institute (RENCI), Chapel Hill, NC.
7/04–6/09	Department Chair, Department of Computer Science, University of North Carolina at Chapel Hill.
4/01–	Faculty member, Program in Bioinformatics and Computational Biology, UNC-CH.
5/98–	Faculty member, Program in Molecular and Cellular Biophysics, UNC-CH.
7/96–7/97	Visiting Professor, Institute for Theoretical Computer Science, Swiss Federal Institute of Technology (ETH), Zürich, Switzerland.
8/87–	Assistant Professor (8/87 – 12/93), Associate Professor (1/94 – 12/01), Full Professor (1/02 –), Department of Computer Science, University of North Carolina, Chapel Hill, NC.
6/87–6/94	Instructor, IBM University-Level Course Curriculum. Condensed one-week courses taught in various locations around the country. Courses taught include Algorithms, Programming Languages & Environments, and Software Engineering Principles.
9/86–8/87	Research Associate to Tom Reps, Department. of Computer Sciences, University of Wisconsin - Madison, Madison, WI. Investigation of issues in programming languages and systems.

6/84–7/84 Instructor, Johns Hopkins Center for Academically Talented Youth. An intensive introduction to the mathematical foundations of computer science for nationally selected students aged 12-15.

1/80–5/81 Teaching Fellow, Cornell University, Ithaca, NY. Instructor for two introductory programming courses based on *APL* and PASCAL respectively.

Industry Experience

5/00 – 8/00 3rdTech, Inc. Consultant and software developer for DeltaSphere 3D Laser Scanner system.

4/95 – 7/96 Gerald Pechanek, IBM MWAVE group, RTP, NC (spun-out to create BOPS, Inc.). Consultant on parallel computing issues in DSP chip and system design.

6/81 – 8/83 Ken Wilson, Department of Physics, Cornell University, Ithaca, NY. Development of a machine code optimizer for the FPS array processors using stochastic methods.

4/78 – 8/81 STSC, Inc., Rockville, MD. Systems Programmer. Member of the four man development team responsible for the design and implementation of the *APL*PLUS* interpreters, primarily the production time-sharing system programmed in IBM 370 assembler code.

9/75 – 1/81 Digital Effects, Inc., New York. Founding member. Development of an animation production system and rendering software, used to produce computer generated film sequences for the television and motion picture industry. Sample productions include portions of the original Disney film "TRON".

Research Areas

High-performance computing: algorithms, programming languages, compilers and architectures. Scientific computing with focus on bioinformatics and computational biology. High-level programming languages and problem solving environments. Formal techniques in program development.

Honors

Research Fellow, Renaissance Computing Institute (RENCI), 2010.

IBM Faculty award, 2009.

Fellow of the Institute of Arts and Humanities, Fall 2006.

IBM Faculty award, 2006.

Outstanding Teaching Award, CSSA May 2001

Research Development Award, UNC-CH 1995

Junior Faculty Development Award, UNC-CH 1989

Post-doctoral Supervision

Susan Paulsen, Ph.D. 1994 Quantitative Genetics, Duke University (2003 - 2007),

Martin Simons, Ph.D. 1996 Computer Science, Technische Universität Berlin (1998-1999).

Lars Nyland, Ph.D. 1991 Computer Science, Duke University (1991-1997)

PhD and MS Student Supervision

Ph.D. committee memberships: 68 Ph.D. committees, 9 as supervisor, 12 as committee chair, 2 as external examiner.

Ph.D. students supervised:

- Edoardo S. Biagioni, Ph.D. May 1992 (Co-advisor with G. Magó), *Scan-Directed Load Balancing*, Systems Scientist, Carnegie Mellon University (FOX group on foundations of programming languages); Professor, Univ. of Hawaii.
- Daniel W. Palmer, Ph.D. Nov. 1996, *Compiling High-Level Data-Parallel Programs for Parallel Execution*, Professor, John Carroll University.
- Rickard E. Faith, Ph.D. Dec. 1997, *Debugging Programs After Structure-Changing Transformation*, Senior Member of the Technical Staff, NetApp, Inc.
- James W. Riely, Ph.D. Aug. 1999, *Abstract Values and Cost Models for Concurrent Programs*, Research Associate, Concurrency and Functional Languages project, University of Sussex, Brighton, England; Associate Professor, DePaul University.
- Wolf Pfannenstiel, Ph.D. Dec. 2000 (TU Berlin), *Piecewise Execution of Nested Data Parallel Programs*, (Co-advisor with S. Jaehnichen, TU Berlin), Member of the Technical Staff, VW Gedas, Berlin.
- Jun (Luke) Huan, Ph.D. Oct. 2006, *Discovering Patterns in Families of Protein Structures*, (Co-advisor with W. Wang), Associate Professor, Department of EECS, Kansas University.
- Stephen L. Olivier, Ph.D. May 2012, *Locality-Aware Scheduling for Task Parallel Programming Languages*, Research Scientist, Sandia National Laboratories, Albuquerque, NM.
- Darshan Singh, (current Ph.D. candidate) *Graph representation for analysis of sequencing data*, (exp. 2013).
- Christian F. Orellana, (current Ph.D. candidate) *Algorithms for analysis of single molecule long-read sequencing*, (exp. 2014).

MS committee memberships: 8 MS (thesis-option) committees, 1 as advisor and committee chair. MS student supervised:

- J. Christopher Ramming, M.Sc. Sep. 1989, *LLPT: A Little-Language Prototyping Tool*, DARPA Strategic Technology Office Program Manager.

Professional Activities (2008-2013)

Journal Editorial Boards

- Journal of Scientific Programming (2004 -)
- International Journal of High Performance Computer Graphics, Multimedia and Visualisation (2000 -)

Program Committee Member, Supercomputing 2013.

Co-editor, special issue of Scientific Programming on High Performance Computing on Cell B.E. Processors (2008)

Panelist, NSF-CRA Workshop on "Computer Science outside of the Box", Washington DC, Nov 10, 2008.

Chair, Advisory Committee for Administration and Allocation of NIH High Performance Computing Resource at UNC Chapel Hill Computer Science "Biomedical Analysis and Simulation Supercomputer (BASS)" (2008 -).

University Activities (2008-2013)

Carolina Center for Genomic Sciences, Advisory Board on Sequencing Informatics (2011 -)

ITS Research Computing Advisory Board (2009 -)

Search Committee for Dean of SILS (2009)

Task Force for new degree program in Health Informatics (2009-2010)

Provost's Committee on Research Computing at UNC (2008 - 2009)

Internal Review Committee member, Statistics and OR Dept., 10-year Review (Feb 2008)

Planning Committee for Curriculum in Applied Science and Engineering (2008 -)

Provost's Advisory Group on Classroom Technology Planning (2008)

RENCI Advisory Board for Research Computing (2008 - 2009)

IAH Fellow in Academic Leadership Program (2006 -)

University Faculty Council (1992 – 1995).

Departmental Activities (2008-2013)

Department Chair (2004-2009)

Director of Graduate Studies (1994 – 2004, 2009 -)

Committee memberships

10-year Departmental Review 1991 (Chair), 1999, 2009 (Chair)
F. P. Brooks Computer Science Building
Chair, Graduate Studies Committee
Graduate Curriculum and Planning Committee
Undergraduate Studies Committee
General Education Committee
Teaching Review Committee

Research Support

Role	Agency	Title	Total Award	Dates
PI	NIH	Unlocking transcript diversity via differential analyses of splice graphs (1 R01 HG006272-01A1)	$1,340,000	5/28/12 – 3/31/15
SI	DOE	XPRESS: eXascale Programming Environment and System Software (DE- FC02-l2ER26102)	$950,000	9/1/12 – 8/31/15
Co-PI	NSF	Collaborative Research: CDI-Type II - Revolutionary Advances in Modeling Transport Phenomena in Porous Medium Systems (CDI-0941235)	$1,100,000	12/1/09 – 11/30/13
PI	IBM	Dynamic Load Balancing Techniques for Extreme-Scale Business Applications (IBM Faculty Award)	$30,000	2009 – 2010
Co-PI	NSF	ABI: Exon Splice Pattern Characterization of the Whole mRNA Transcriptome (DBI-0850237)	$1,027,384	8/1/09 – 7/31/13
Co-PI	NSF	FRG - Advanced Algorithms and Software for Problems in Computational Bio-Fluid Dynamics (DMS-0854961)	$870,478	7/1/09 – 6/30/13
Co-PI	NSF	III-Core: Discovering and Exploring Patterns in Subspaces (IIS-0812464)	$444,711	9/1/08 – 8/31/11
SI	NSF	CRI-IAD: Integrated Projector-Camera Modules for the Capture and Creation of Wide-Area Immersive Experiences	$310,000	4/1/08 – 3/31/11
PI	IBM	Novel Applications for Cell B.E. (Faculty Research Award)	$15,000	2006 – 2007
Co-PI	NIH	Protein Structure/Function Specific Packing Motifs (1R01GM068665-01A3)	$1,089,388	9/1/06-8/31/10/
PI	IBM	Shared University Research (Equipment Grant)	$83,000	2006-07
SI	NIEHS	Superfund Basic Research Program - Mathematical and Statistical Analysis and Modeling Core (P42ES05948)	$5,000,000	10/1/06 – 9/30/10
Co-PI	NSF	Identifying Spatial Motifs for Classification of Protein Structure and Function (CCF-EMT 0523875)	$300,000	7/15/05 – 7/14/08
Co-PI	EPA	Carolina Environmental Bioinformatics Research Center (EPA R832720)	$4,000,000	8/1/05 – 7/31/10
SI	ARO	Computer Generated Force Scalability using GPUs	$2,400,000	1/15/05 – 1/14/08

Role	Agency	Title	Total Award	Dates
Co-PI	NIH	(P20) Carolina Center for Experimental Genetic Analysis (P20-RR2075)	$1,795,000	10/1/04 – 9/30/07
Co-PI	NSA	Parallel Unbalanced Tree Search	$500,000	5/1/04 – 12/31/06
SI	UNC GA	UNC Training Program in Bioinformatics	$450,000	4/19/02 – 8/31/05
Co-PI	Lucite Foundn	Parallel Programming Paradigms for Distributed Memory and DSM multiprocessors	$345,000	4/1/02 – 8/30/03
Co-PI	DOE	Environmental Modeling System	$969,000	2/1/02 – 1/31/05
Co-PI	NSF	A Distributed, High-Performance Computing Environment for the Applied Sciences	$1,024,000	9/01/01 – 8/31/04
Co-PI	Lucite Foundn	Parallel Programming Paradigms for Distributed Memory and DSM multiprocessors	$325,000	11/01/00– 3/31/02
Co-PI	NSF	ITR-ACS: Self-Scheduling N-body simulation algorithms	$450,649	10/1/00 – 9/30/03
Co-PI	EPA	An Object-oriented Integrated Framework for Multi-discipline Ecosystem Modeling	$863,049	8/20/00 – 9/30/02
SI	NIH	Parallel Computing in Structural Biology	$2,500,000	10/1/98 – 9/30/03
PI	NSF	Cooperative Research (with TU Berlin): Nested Parallelism in Fortran 90 Programs	$10,060	3/1/98 – 8/31/01
SI	NSF	SGI Reality Monster (equipment grant)	$1,900,000	9/1/98 – 8/31/01
Co-PI	Cray NCSC	Nested Parallelism in Fortran 90	$8,000	1/1/98 – 12/31/98
Co-PI	Intel Corp.	Computing Power for Collaborative Science (equipment grant)	$2,858,747	8/1/97 – 7/31/00
PI	CSCS, CH	Generating efficient parallel implementations for irregular problems on the NEC SX-4	CHF 7,500	9/1/96 – 8/31/98
	ETH Zürich	Salary support for visiting sabbatical position	CHF 80,000	7/15/96 – 7/15/97
PI	ARPA	Software Infrastructure for the Rapid Development of Interactive and Collaborative Educational Simulations	$193,447	8/28/95 – 8/27/97
PI	UNC (URC)	University Faculty Research Grant	$1,500	4/26/96 – 4/25/98

Role	Agency	Title	Total Award	Dates
PI	Cray NCSC	High Performance Irregular Algorithms via High-Level Notations and Novel Compilation Techniques	$8,000	1/1/96 – 12/31/97
PI	UNC	Research Development Award	$700	2/1/95 – 12/31/95
PI	NSWC	Advanced Geoserver Prototyping Experiment	$12,499	8/1/94 – 9/30/94
PI	Rome Labs	A Refinement-Based Methodology for the Architecture-Independent Design and Development of Parallel Software	$990,000	5/1/94 – 8/15/96
SI	NIH	Parallel Computing Resource for Structural Biology	$3,349,000	7/1/93 – 6/30/98
PI	EPA	Application of Highly Parallel Computers to Air Quality Simulation	$78,370	10/1/92 – 6/30/94
PI	DARPA	A Prototyping System for Parallel and Distributed Applications	$2,150,000	9/1/92 – 2/29/96
SI	NCI	HPCC Technology for Realtime Medical Decision Support	$460,432	9/1/92 – 8/31/95
PI	STSC, inc.	Use of *APL*PLUS* in a Programming Paradigms course (software)	$36,000	8/17/92 – 12/31/94
Co-PI	ARO	An Investigation of Fluid Flow and Contaminant Transport Processes in Heterogeneous Multiphase Systems	$2,356,310	7/1/92 – 6/30/97
PI	DARPA	Design and Demonstration of a Common Prototyping System	$720,000	5/1/91 – 6/30/92
PI	MasPar Corp.	Research Agreement	$18,225	2/1/91 – 1/31/92
PI	DARPA	Proposal for a Common Prototyping Language Based on Unity, Refine and SETL	$500,000	5/1/90 – 4/30/91
PI	ONR	Compiling Data-Parallel Programming Languages for SIMD Execution	$87,000	3/15/89 – 6/30/90
PI	UNC-CH Found'n	Investigation of Issues in Parallel Programming	$3,000	1/1/89 – 12/31/89

Courses Taught

Parallel Computing

- High Performance Computing (UNC COMP 633 graduate core course)
- Parallel Computing: Theory and Practice (ETH D-INFK undergraduate course)
- Parallel and Distributed Computing (with P. Widmayer, ETH D-INFK, graduate course)
- Parallel Algorithms (UNC COMP 790 graduate course)
- Parallel Programming Languages (UNC COMP 790 graduate course)

Compiler Construction

- Compilers (UNC COMP 520 undergraduate course)
- Advanced Compiler Design (UNC COMP 720 graduate course)

Algorithms and Theory of Computation

- Bioalgorithms (UNC COMP 555 grad/undergad course)
- Parallel Algorithms (UNC COMP 790 graduate course)
- Models of Languages and Computation (UNC COMP 455 undergraduate course)
- Algorithm Design and Analysis (IBM internal course)

Programming Languages

- Advanced Topics in Programming Languages (UNC COMP 724 graduate course)
- Programming Paradigms (UNC COMP 790 graduate course)
- Comparative Programming Languages (UNC COMP 590)
- Programming Languages and Programming Environments (IBM internal course)

Software Engineering

- Formal Methods in Software Engineering (CMU SEI/UNC graduate course)
- Software Engineering (IBM internal course)

Introduction to Programming

- Introduction to Functional Programming (UNC COMP 121 undergraduate core course)
- Introduction to Programming (UNC COMP 110 undergraduate core course)

Publications

I. Journal Articles, Book Chapters, and Edited Volumes

1. Y. Huang, Y. Hu, C.D. Jones, J.N. Macleod, D.Y. Chiang, Y. Liu, J.F. Prins, J. Liu, "A Robust Method for Transcript Quantification with RNA-seq Data", *Journal of Computational Biology* **20**(3):167-187. doi:10.1089/cmb.2012.0230, PMID: 23461570, March 2013.
2. Y. Hu, Y. Huang, Y. Du, C. F. Orellana, D. Singh, A. R. Johnson, A. Monroy, P.-F. Kuan, S. M. Hammond, L. Makowski, S. H. Randell, D. Y. Chiang, D. Neil Hayes, C.D. Jones, Y. Liu, J. F. Prins, J. Liu, "DiffSplice: the genome-wide detection of differential splicing events with RNA-seq", *Nucleic Acids Research* **41**(2):e39 doi:10.1093/nar/gks1026, PMID: 23155066, January 2013.
3. Cancer Genome Atlas Network, "Comprehensive genomic characterization of squamous cell lung cancers", *Nature* **489**(7417):519–525, DOI:10.1038/nature11404, PMID: 22960745, 27 September 2012.
4. Cancer Genome Atlas Network, "Comprehensive molecular characterization of human colon and rectal cancer", *Nature* **487**(7407):330–337, DOI:10.1038/nature11252, PMID: 22810696 18 July 2012.
5. Y. Huang, Y. Hu, C. Jones, J. MacLeod, D. Chiang, Y. Liu, J. Prins, J. Liu, "A Robust Method for Transcript Quantification with RNA-seq Data", *Research in Computational Molecular Biology* (RECOMB), LNCS **7262**:127-147, 2012.
6. S. Olivier, A. Porterfield, K. Wheeler, M. Spiegel, J. Prins, "OpenMP Task Scheduling Strategies for Multicore NUMA Systems", *International Journal of High Performance Computing Applications*, **26**(2):110-124, 2012.
7. D. Singh, C. F. Orellana, Y. Hu, C. D. Jones, Y. Liu, D. Y. Chiang, J. Liu, J. F. Prins, "FDM: A Graph-based Statistical Method to Detect Differential Transcription using RNA-seq Data", *Bioinformatics* **27**(19), DOI:10.1093/bioinformatics/btr458, PMID: 21824971, Oxford Journals, 2011 (pp 2633-2640).
8. Y. Hu, K. Wang, X. He, D. Y. Chiang, J. F. Prins, J. Liu, "A probabilistic framework for aligning paired-end RNA-seq data", *Bioinformatics* **26**; DOI: 10.1093/bioinformatics/btq336, PMID: 20576625, Oxford Journals, 2010 (pp 1950-1957).
9. K. Wang, D. Singh, Z. Zeng, S. Coleman, Y. Huang, G. L. Savich, X. He, P. Mieczkowski, S. Grimm, C. Perou, J. MacLeod, D. Chiang, J. F. Prins, J. Liu, "MapSplice: "Accurate mapping of RNA-seq reads for splice junction discovery", *Nucleic Acids Research,* DOI: 10.1093/nar/gkq622, PMID: 20802226, Oxford Journals, 2010 (pp 1 – 14)
10. D. Bandyopadhyay, J. Huan, J. Liu, J. Prins, J. Snoeyink, W. Wang, A. Tropsha, Functional Neighbors: Relationships between Non-homologous Protein Families Inferred Using Family-Specific Fingerprints, *IEEE Trans. on Information Technology in Biomedicine* **14** (5), 2010 (pp 1137 – 1143).
11. S. Olivier, J. Prins, "Comparison of OpenMP 3.0 and Other Task Parallel Frameworks on Unbalanced Task Graphs", *International Journal of Parallel Programming* (IJPP) **38** (5-6), Springer, DOI: 10.1007/s10766-010-0140-7, (pp 341-360), 2010.

12. D. Bandyopadhyay, J. Huan, J. Prins, J. Snoeyink, W. Wang, A. Tropsha, "Identification of Family-Specific Residue Packing Motifs and their use for Structure-Based Protein Function Prediction: I. Method Development", *Journal of Computer Aided Molecular Design* **23**, PMID: 19543979 (pp 773 - 784), 2009.
13. D. Bandyopadhyay, J. Huan, J. Prins, J. Snoeyink, W. Wang, A. Tropsha, "Identification of Family-Specific Residue Packing Motifs and their use for Structure-Based Protein Function Prediction: I I. Case Studies and Applications", *Journal of Computer Aided Molecular Design* **23**, PMID: 19548090, (pp 785 - 797), 2009.
14. M. Gschwind, F. Gustavson, J. Prins, eds, "High Performance Computing on C ell B.E. Processors", special issue of *Scientific Programming* **17** (1-2)**,** IOS Press, 2009 (pp 1 – 214).
15. J. Dinan, S. Olivier, G. Sabin, J. Prins, P. Sadayappan, C-W Tseng, "A Message Passing Benchmark for Unbalanced Applications", *Simulation Modeling Practice and Theory* **16** (8), Elsevier, (pp 1177 – 1189), 2008.
16. L. Nyland, M. Harris, J. Prins, "Fast N-Body Simulation with CUDA" in *GPU Gems* 3, H. Nguyen, ed., Addison Wesley, 2007 (pp 677 – 696).
17. J. Huan, J. Prins, W. Wang, "Local Structure Comparison of Proteins", *Computational Biology and Bioinformatics* (*Advances in Computers* **68***)*, C.-W. Tseng (ed.), Elsevier, 2006 (pp 178 – 253).
18. D. Bandyopadhyay, J. Huan, J. Liu, J. Prins, J. Snoeyink, W. Wang, A. Tropsha, "Structure-based function inference using protein family-specific fingerprints", *Protein Science* **15** (6), 2006 (pp 1537 – 1543).
19. J. Huan, W. Wang, D. Bandyopadhyay, J. Snoeyink, J. Prins, and A. Tropsha, "Comparing graph representations of protein structure for mining family-specific residue-based packing motifs", *Journal of Computational Biology* (JCB) **12** (6), 2005 (pp 657 – 671).
20. C. Pan, J. Prins, C. Miller, "A High-performance Lattice Boltzmann Implementation to Model Flow in Porous Media", *Computer Physics Communications* **158**, 2004 (pp 89 – 105).
21. G. Mann, R. Yun, L. Nyland, J. Prins, J. Board, J. Hermans, "The Sigma MD program and a generic interface applicable to multi-functional programs with complex, hierarchical command structure", in *Computational Methods for Macromolecules*, T. Schlick, H.-H. Gan, eds., *LNCSE* **24**, Springer – Verlag, 2002 (pp 129 – 145).
22. S. Midkiff, J. Moreira, S. Chatterjee, J. Ferrante, M. Gupta, J. Prins, C-W Tseng, eds., *Thirteenth International Workshop on Languages and Compilers for Parallel Computing (LCPC 2000), LNCS* **2017**, Springer-Verlag, 2001 (383 pp).
23. L. Nyland, J. Prins, A. Goldberg, P. Mills, "A Design Methodology for Data-Parallel Applications", *Transactions on Software Engineering* **26** (4), IEEE, 2000 (pp 293 - 315).
24. L. Carter, J. Ferrante, S. Chatterjee, Z. Li, J. Prins, D. Sehr, P. Yew, eds., Proceedings of the *Twelfth International Workshop on Languages and Compilers for Parallel Computing (LCPC 99),* Springer-Verlag 2000.
25. A. Goldberg, J. Prins, J. Reif, R. Faith, Z. Li, P. Mills, L. Nyland, D. Palmer, J. Riely, S. Westfold, "The Proteus System for the Development of Parallel Applications", in *Prototyping and Software Development*, M. Harrison, ed., Springer-Verlag (44 pp)

26. J. Prins, S. Chatterjee, M. Simons, "Irregular Computations in Fortran – Expression and Implementation Strategies", *Scientific Programming* **7***,* 1999 (pp 313-326).
27. J. Prins, J. Hermans, G. Mann, L. Nyland, M. Simons, "A Virtual Environment for Steered Molecular Dynamics", *Future Generation Computer Systems* **15***,* 1999 (pp 485-495)
28. S. Chatterjee, J. Prins, L. Carter, J. Ferrante, Z. Li, D. Sehr, P. Yew, eds., Proceedings of the *Eleventh International Workshop on Languages and Compilers for Parallel Computing (LCPC 98), LNCS* **1656**, Springer-Verlag, 1999 (384 pp).
29. L. Nyland, J. Prins, R.H. Yun, J. Hermans, H.-C. Kum, L. Wang, "Achieving Scalable Parallel Molecular Dynamics Using Dynamic Domain Decomposition Techniques", *Journal of Parallel and Distributed Computing*, 1998. (pp 125-138)
30. J. Prins, M. Ballabio, M. Boverat, M. Hodous, D. Maric, "Fast Primitives for Irregular Computations on the NEC SX-4", *Crosscuts* **6** (4), CSCS, 1997. (pp 6-10)
31. S. Kumar, S. Goddard, J. Prins, "Connected Components Algorithms for Mesh-Connected Parallel Computers", in *Parallel Algorithms*, S. Bhatt, ed., AMS, 1997. (pp 43-58)
32. J. Leech, J. Prins, J. Hermans, "SMD: Visual Steering of Molecular Dynamics for Protein Design", *Computational Science & Engineering* **3** (4), IEEE, 1996. (pp 38-45)
33. S. Horwitz, J. Prins, T. Reps, "Integrating Non-Interfering Versions of Programs", in *Software Merging and Slicing*, V. Berzins (Ed.), IEEE Computer Society Press, Los Alomitos, CA, 1995. (pp 137-190)
34. Goldberg, P. Mills, L. Nyland, J. Prins, J. Reif, J. Riely, "Specification and Development of Parallel Algorithms with the *Proteus* System", in *Specification of Parallel Algorithms*, G. Blelloch, M. Chandy, S. Jagannathan, eds., AMS, 1995. (pp 383-399)
35. P. Mills, L.Nyland, J. Prins, J. Reif, "Software Issues in High-Performance Computing and a Framework for the Development of HPC Applications", in *Computer Science Agendas for High Performance Computing*, U. Vishkin, ed., 1994. (pp 110-117)
36. J. Butterworth, J. Prins, "A Comparison of Lattice-Gas Automata Implementations on the MasPar MP-1"", in *Parallel Computational Fluid Dynamics*, J. Häuser, ed., Elsevier Scientific, 1993. (pp 42-56)
37. E. Biagioni, J. Prins, "Scan-Directed Load Balancing for Mesh-Connected Highly-Parallel Computers", in *Unstructured Scientific Computation on Scalable Multiprocessors*, P. Mehrotra, J. Saltz, R. Voigt (eds.), MIT Press, 1992. (pp 371-395)
38. S. Horwitz, J. Prins, T. Reps, "Integrating Non-Interfering Versions of Programs", *Transactions on Programming Languages and Systems* **11** (3), ACM, 1989. (pp 345-387)
39. T. Reps, S. Horwitz, J. Prins, "Support for Integrating Program Variants in an Environment for Programming in the Large", in *Software Version and Configuration Control*, J. Winkler (ed), Teubner, 1988. (pp 197-216)
40. D. Gries, J. Prins, "McLaren's Masterpiece", *Science of Computer Programming* **8,** 1987. (pp 139-145)
41. J. Prins, *Partial Implementations in Program Derivation*, Ph. D. thesis, Cornell University, 1987. (153 pp)

II. Refereed Conference Papers

42. R.E. Overman, J.F. Prins, L.A. Miller, M.L. Minion, "Dynamic Load Balancing of the Adaptive Fast Multipole Method in Heterogeneous Systems", Proc. ASHES 2013 workshop (IPDPS), 2013.
43. A. Porterfield, S. Olivier, S. Balachandran, J.F. Prins, "Power Measurement and Energy-Saving Automatic Concurrency Throttling for OpenMP Programs", Proc. HP-PAC 2013 workshop (IPDPS), 2013.
44. S. Olivier, B. De Supinski, M. Schulz, J. Prins, "Characterizing and Mitigating Work Time Inflation in Task Parallel Programs", (awarded **Best Student Paper**) *Proc Intnl Conf Supercomputing* (SC12), 2012.
45. Y. Huang, Y. Hu, C. D. Jones, J. N. MacLeod, D. Y. Chiang, Y. Liu, J.F. Prins, J. Liu. A Linear Framework for Transcript Quantification from RNA-seq Data. ISMB, 2012.
46. R. Overman, R. Oritz, V. Kushwaha, J. Prins, M. Minion, "CPU-GPU hybrid implementation of the multipole method for the method of regularized stokeslets", *15th SIAM Conference on Parallel Processing for Scientific Computing* (PP12), 2012.
47. S. Olivier, A. Porterfield, K. Wheeler, J. Prins, "Scheduling Task Parallelism on M ulti-Socket Multicore Systems", *Proc. International Workshop on Runtime and Operating Systems for Supercomputers* (ROSS), (pp 49 – 56), 2011.
48. D. Singh, C. F. Orellana, Y. Hu, C. D. Jones, Y. Liu, D. Y. Chiang, J. Liu, J. F. Prins, "FDM: A Graph-based Statistical Method to Detect Differential Transcription using RNA-seq Data", HitSeq/ISMB 2011.
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