

CURRICULUM VITAE**Dr. Jan F. Prins**

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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

7/04– 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 film “TRON”.

Research Areas

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

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: 56 Ph.D. committees, 7 as supervisor, 10 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); Associate 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*, 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), Assistant Professor, Department of EECS, Kansas University.
 Stephen L. Olivier, (current Ph.D. candidate) *Scalable Load Balancing Techniques*.

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.

Honors

Fellow of the Institute of Arts and Humanities, Fall 2006.
 Outstanding Teaching Award, CSSA May 2001
 Research Development Award, UNC-CH 1995
 Junior Faculty Development Award, UNC-CH 1989

Professional Activities (2004-2008)Journal Editorial Boards

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

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

Program committee member, 5th IEEE International Workshop on High Performance Computational Biology (HiCOMB 2006).

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)”.

IBM Academic Supercomputing Advisory board (1994 – 1997).

University Activities (2004-2008)

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

Internal Review Committee member, Department of Operations Research and Statistics 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 /ITS Advisory Board for Research Computing (2008 -)

IAH Fellow in Academic Leadership Program (2006 -)

Search Committee for the Dean of Arts and Sciences (2006 - 07)

Advisory Board member, School of Information and Library Science (2006 -)

AGEP Program liaison for Computer Science (2006 -)

Award Recommendation Panel, UNC General Administration, Office of the President (2005).

Executive Advisory Committee, Bioinformatics and Computational Biology training program

University Faculty Council (1992 – 1995).

Departmental Activities (2004-2008)

Chair (2004-)

Committee memberships

10-year Departmental Review

F. P. Brooks Computer Science Building

Graduate Studies Committee

Undergraduate Studies Committee

General Education Committee

Research Support

Role	Agency	Title	Total Award	Dates
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	4/1/2008 – 3/31/2011
PI	IBM	Novel Applications for Cell B.E. (Faculty Research Award)	\$15,000	2006-07
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	10/1/2006 – 9/30/2010
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
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

Role	Agency	Title	Total Award	Dates
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
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

Role	Agency	Title	Total Award	Dates
SI	NCI	HPCC Technology for Realtime Medical Decision Support	\$460,432	9/1/92 – 8/31/95
PI	STSC, inc.	Use of <i>APL*PLUS</i> 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

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

Algorithms and Theory of Computation

- 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. Book Chapters, Edited Volumes, and Journal Articles

1. M. Gschwind, F. Gustavson, J. Prins, eds, “High Performance Computing on Cell B.E. Processors”, to appear as special issue of *Scientific Programming*, IOS, 2009.
2. 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, 2008.
3. 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).
4. 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).
5. 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).
6. 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).
7. 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).
8. 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).
9. 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).
10. 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).
11. 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.
12. 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)
13. J. Prins, S. Chatterjee, M. Simons, “Irregular Computations in Fortran – Expression and Implementation Strategies”, *Scientific Programming* **7**, 1999 (pp 313-326).
14. 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)

15. 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).
16. 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)
17. 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)
18. 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)
19. 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)
20. 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 Alamitos, CA, 1995. (pp 137-190)
21. 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. Bllloch, M. Chandy, S. Jagannathan, eds., AMS, 1995. (pp 383-399)
22. 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)
23. 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)
24. 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)
25. 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)
26. 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)
27. D. Gries, J. Prins, "McLaren's Masterpiece", *Science of Computer Programming* **8**, 1987. (pp 139-145)
28. J. Prins, *Partial Implementations in Program Derivation*, Ph. D. thesis, Cornell University, 1987. (153 pp)

II. Refereed Conference Papers

29. D. Bandyopadhyay, J. Huan, J. Liu, J. Prins, J. Snoeyink, W. Wang, and A. Tropsha, "Functional Neighbors: Relationships between Non-homologous Protein Families Inferred Using Family-Specific Fingerprints", in *Proc. of 2008 Conf. on Bioinformatics and Biomedicine (BIBM'08)*, IEEE, 2008.
30. Q. Zhang, W. Wang, L. McMillan, J. Prins, F. Pardo-Manuel de Villena, D. Threadgill, Genotype Sequence Segmentation: Handling Constraints and Noise, *Proceedings of the 8th Workshop on Algorithms in Bioinformatics (WABI)*, 2008.
31. S. Olivier, J. Prins, "Scalable Load Balancing Using UPC", *Proc. Intl Conf on Parallel Programming (ICPP)*, IEEE 2008.
32. S. Olivier, J. Prins, J. Derby, K. Vu, "Porting the GROMACS Molecular Dynamics Code to the Cell Processor", *Proc. of 8th IEEE Intl. Workshop on Parallel and Distributed Scientific and Engineering Computing (PDSEC-07)*, 2007.
33. J. Dinan, S. Olivier, J. Prins, G. Sabin, P. Sadayappan, C.-W. Tseng, "Dynamic Load Balancing of Unbalanced Computations Using Message Passing", *Proc. of 6th Intl. Workshop on Performance Modeling, Evaluation, and Optimization of Parallel and Distributed Systems (PMEO-PDS 2007)*, 2007.
34. J. Liu, Q. Zhang, W. Wang, L. McMillan, J. Prins, "Poclustering: lossless clustering of dissimilarity data", *Proc 7th SIAM Conference on Data Mining (SDM)*, 2007.
35. S. Olivier, J. Huan, J. Liu, J. Prins, J. Dinan, P. Sadayappan, C.-W. Tseng, "UTS: An Unbalanced Tree Search Benchmark", *19th International Workshop on Languages and Compilers for Parallel Computing (LCPC)*, 2006.
36. J. Liu, Q. Zhang, W. Wang, L. McMillan, J. Prins, "Clustering pair-wise dissimilarity data into partially ordered sets", *Proc. 12th ACM International Conference on Knowledge Discovery and Data Mining (SIGKDD)*, 2006.
37. J. Huan, D. Bandyopadhyay, J. Prins, J. Snoeyink, A. Tropsha, W. Wang, "Distance-based Identification of Spatial Motifs in Proteins Using Constrained Frequent Subgraph Mining", *Computational Systems Bioinformatics Conference (CSB)*, 2006.
38. J. Liu, S. Paulsen, X. Sun, W. Wang, A. Nobel, J. Prins, Mining Approximate Frequent Itemsets In the Presence of Noise: Algorithm and Analysis, *SIAM Conference on Data Mining (SDM)*, 2006.
39. J. Huan, D. Bandyopadhyay, J. Liu, J. Prins, J. Snoeyink, A. Tropsha, W. Wang, "Rapid determination of local structural features common to a set of proteins" (demo), *Proceedings of the 13th International Conference on Intelligent Systems for Molecular Biology (ISMB)*, 2005.
40. J. Liu, S. Paulsen, W. Wang, A. Nobel, J. Prins, "Mining Approximate Frequent Itemsets from Noisy Data", *Proceedings of the 5th IEEE International Conference on Data Mining (ICDM)*, 2005
41. D. Bandyopadhyay, J. Huan, J. Liu, J. Prins, J. Snoeyink, A. Tropsha, and W. Wang, "Function inference using family-specific subgraph fingerprints mined from protein

- families”, *Proceedings of the 13th International Conference on Intelligent Systems for Molecular Biology (ISMB)*, 2005.
42. J. Huan, W. Wang, J. Prins, J. Yang, “SPIN: Mining Maximal Frequent Subgraphs from Graph Databases”, in *Proceedings of the 10th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, 2004.
 43. M. Farthing, C. Miller, D. Sassen, J. Prins, “A problem solving environment for subsurface flow and transport phenomena”, in *International Conference on Computational Methods in Water Resources XV (CMWR)*, Elsevier, 2004.
 44. J. Huan, W. Wang, D. Bandyopadhyay, J. Snoeyink, J. Prins, A. Tropsha, "Mining Protein Family Specific Residue Packing Patterns From Protein Structure Graphs", in *Proceedings of the Intl Conf on Research in Computational Molecular Biology (RECOMB)*, 2004.
 45. C. Miller, C. Abhishek, A. Sallerson, J. Prins, M. Farthing, “A comparison of computational and algorithmic advances for solving Richards’ equation” in *International Conference on Computational Methods in Water Resources XV (CMWR)*, Elsevier, 2004.
 46. J. Huan, W. Wang, A. Washington, J. Prins, R. Shah, A. Tropsha, “Accurate classification of protein structural families using coherent subgraph analysis”, in *Proceedings of the Pacific Symposium on Biocomputing (PSB)*, 2004.
 47. K. Berlin, J. Huan, J. Prins, W. Pugh, P. Sadayappan, J. Spacco, C.-W. Tseng, “Evaluating the Impact of Programming Language Features on the Performance of Parallel Applications on Cluster Architectures”, *Proceedings of the 14th International Workshop on Languages and Compilers for High Performance Computing (LCPC)*, 2003.
 48. J. Huan, W. Wang, J. Prins, “Efficient mining of frequent subgraphs in the presence of isomorphism”, *Proceedings of the 3rd IEEE International Conference on Data Mining (ICDM)*, 2003.
 49. J. Huan, J. Prins, W. Wang, T. Vision, “Reconstructing of ancestral gene order after segmental duplication and gene loss”, *Proceedings of the IEEE Computer Society Bioinformatics Conference (CSB)*, 2003.
 50. C. Pan, J. Prins, and C. Miller, “A High-Performance Lattice Boltzmann Implementation of Multiphase Flow in Porous Media”, *Workshop on Simulation and Optimization*, Statistical and Applied Mathematical Sciences Institute, Research Triangle Park, North Carolina, 28-30 April 2003.
 51. D. Stotts, J. Prins, L. Nyland, “CobWeb: Visual Design of Collaboration Protocols for Dynamic Group Web Browsing”, *Workshop on Visual Computing (part of Distributed multimedia Systems 2002)*, IEEE, 2002.
 52. J. Riely, J. Prins, “Flattening is an Improvement”, in *Proceedings of the Seventh Static Analysis Symposium (SAS)*, LNCS **1284**, Springer-Verlag, 2000.
 53. L. Nyland, J. Prins, R.H. Yun, J. Hermans, H.-C. Kum, L. Wang, “Modeling Dynamic Load Balancing in Molecular Dynamics to Achieve Scalable Parallel Execution”, in *Fifth International Symposium on Solving Irregularly Structured Problems in Parallel (Irregular 98)*, Ferreira, A. and Rolim, J. and Simon, H. and Teng, S.-H, eds., LNCS 1457, Springer-Verlag, 1998. (pp 356-365)

54. J. Prins, S. Chatterjee, M. Simons, "Expressing Irregular Computations in Modern Fortran Dialects", in *Languages, Compilers and Runtime Systems (LCR98)*, D. O'Hallaron, ed., LNCS 1511, Springer-Verlag, 1998 (pp 1-16).
55. R. Faith, L. Nyland, J. Prins, "Khepera: A System for the Rapid Implementation of Domain Specific Languages, *Proc. ACM/USENIX conference on Domain Specific Languages*, ACM, 1997. (pp 243-255)
56. L. Nyland, S. Chatterjee, J. Prins, "Parallel Solutions to Irregular Problems Using HPF", First HPF UG meeting, Santa Fe, NM, Feb. 1997.
57. L. Nyland, J. Prins, A. Goldberg, P. Mills, J. Reif, R. Wagner, "A Refinement Methodology for Data-Parallel Applications", in *Proc. EuroPar 96 Parallel Processing Conference*, Lyon, France, LNCS 1123, Springer-Verlag, 1996 (pp 145-151).
58. D. Palmer, J. Prins, S. Chatterjee, R. Faith, "Piecewise Execution of Nested Data-Parallel Programs", in *Languages and Compilers for Parallel Computing (LCPC 95)*, Huang et al., eds., LNCS 1033, Springer-Verlag 1996. (pp 346-362)
59. J. Riely, J. Prins, S. Iyer, "Provably Correct Vectorization of Nested Parallel Programs", *Massively Parallel Programming Models: Suitability, Realization and Performance*, Berlin, IEEE 1995. (pp 213-223)
60. D. Palmer, J. Prins, "Work-efficient Nested Data-Parallelism", *Proc. of the 5th Symposium on the Frontiers of Massively Parallel Processing*, IEEE, 1995. (pp 186-193)
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