Yuefan Deng

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Education

BA (with honors)	Physics	Nankai University	1983
MA	Physics	Columbia University	1985
M. Phil.	Physics	Columbia University	1986
Ph. D.	Theoretical Physics	Columbia University	1989
Postdoctoral	Applied Mathematics Courant Institute	New York University	1989

Academic Experience

1989--1990	Visiting Assistant Professor	Stony Brook University	
1991--1994	Assistant Professor	Stony Brook University	
1994--1998	Associate Professor	Stony Brook University	
1999--	Professor	Stony Brook University	
2019--	Associate Director Institute of Engineering-Driven Medicine	Stony Brook University	
1999--2000	Researcher (Sabbatical)	IBM T. J. Watson Research Center	
1998	Visiting Faculty	Los Alamos National Lab	June/July
1999--2015	Lab Associate	Brookhaven National Lab	
2010--2011	Adjunct Professor	Columbia University	

Main Research Topics

- Parallel Computing
- Monte Carlo Methods
- Molecular Dynamics
- Computational Sciences

Awards and Grants

1. BNL Subcontract (FP00005119), 10/1/2020-9/30/2021, $49,699, Deep Learning-based Object Detector (deblending galaxies).
2. IBM-SUNY Consortium Awards (FP00004096), 5/21/2020-4/20//2021, $100,000, IPDyna: Intelligent Platelet Dynamics.

3. Stony Brook University Seed Award, $100,000, A Machine Learning Approach to Image Segmentation and Analysis of Cancer Cell-tissue Interactions in High-resolution Zebrafish Xenograft Model. Co-PIs: D. Matus and B. Martin
4. BNL Subcontract (FP00003080), 11/15/2019-9/30/2020, $42,000, Deep Learning-based Object Detector.
5. IBM Faculty Award (FP00002468), 9/2019-8/2022, Multiscale Modeling of Platelets.
6. SUNY Chancellor's Award for Excellence in Teaching, 2015-2016, State University of New York (News).
7. Dean's Award for Excellence in Teaching, 2015-2016, College of Engineering and Applied Sciences, Stony Brook University
8. Co-PI of NIH U01: Multiscale Modeling of Blood Flow and Platelet Mediated Thrombosis NHBLI; $3,562,390; 5/1/2016-1/31/2021 (PI: Danny Bluestein. Award #: 74748) (News).
9. Co-PI of NSF Major Research Instrumentation (MRI): A Reconfigurable Supercomputer for Education and Research; $1,400,000 (Plus Matching Grant $600,000); 10/1/2015-9/30/2018 (PI: Robert Harrison) (News)
10. Co-PI of NIH R21, "Multiscale modeling of blood flow and clotting in cardiovascular devices", $421,397; 04/2011-09/2013
11. PI of Mt. Tai Scholar, Shandong Academy of Sciences; RMB 1,000,000+1,000,000 (Est. $330,000); 2011-2015
12. IBM Shared University Research (SUR) Award Through Donation Estimated at $750,000; 2005
13. PI and Chief Architect for Nankai Stars Supercomputer (Fastest Computer in China as of Feb 2004, #42 on Top500 when released; Total grant: RMB 26,000,000 (Est. $4,000,000), 2002-2004
14. PI and Architect of Galaxy Supercomputer: Building a Beowulf Supercomputer Galaxy; Army Research Office; $170,000, 1998
15. St. Jude Research Hospital (Award #: 26446; 2002-2004)
16. Brookhaven National Laboratory (LDRD Award #: 26944; 2002, 2003, 2004, 2005)
17. President's Award for Innovative Teaching, 1996, Stony Brook University
18. IBM Faculty Award, 1994
19. Dean's Award for Excellence in Research, 1993-1994, College of Engineering and Applied Sciences, Stony Brook University
20. Excellent Student Award of Nankai University, 1983

Invited Lectures

1. Plenary Keynote Speaker at the Supercomputing Asia 2019 (SCA19); Singapore; 11-14 March, 2019 (Also, Steering Committee Member)
2. Plenary Speaker at SIAM SEAS 2015 at the University of Alabama at Birmingham; March 20-22, 2015
3. Keynote Speaker at the International Symposium on Grids and Clouds (ISGC); Taipei, Taiwan; March 17-22, 2013
4. Invited Speaker at the CHPC National Meeting; Cape Town, South Africa; December 01-06, 2013

5. Keynote Speaker at the Conference on Computational Physics; Gyeongju, Korea; August 29-September 1, 2006
6. Seminar or Colloquium Lectures at
   - RIKEN (Interdisciplinary Theoretical and Mathematical Sciences Program), Japan, March 2019
   - National University of Singapore (Computer Science), 2014
   - Nanjing University (Mathematics), China, 2014
   - Sun Yat-sen University (Physics), China, 2013
   - University of Sao Paulo (Physics), Brazil, 2013
   - King Abdullah University of Science and Technology, Saudi Arabia, 2012
   - Chinese Academy of Sciences, 2002, 2012
   - San Diego State University, USA, 2012
   - Korea Advanced Institute of Science and Technology, Korea, 2010
   - The Rockefeller University, USA, 2008
   - Wuhan University, China, 2007
   - Fudan University, China, 2006
   - Middle East Technical University, Turkey, 2005
   - Nankai University, China, 2002
   - The University of Hong Kong, 1996
   - Hong Kong University of Science and Technology, 1994
   - Columbia University (APAM), USA, 1992

Courses Taught at Stony Brook and Elsewhere

Stony Brook University:

1. AMS 321 Computer Projects in Applied Mathematics; Approximately 550 Students During 1999-2012
2. AMS 326 Numerical Analysis; Approximately 350 Students During 2014-2020
3. AMS 361 Applied Calculus IV; Approximately 12,860 Students During 2002-2020
4. AMS 530 Principles of Parallel Computing; Approximately 715 Students During 1990-2020

National University of Singapore:

1. CS3210 Parallel Computing; 17 Students; Spring 2014

University of Sao Paulo, Brazil:

1. A Short Course on Parallel Computing; 15 Students; Fall 2013

Chinese Academy of Sciences:

1. Summer Course on Monte Carlo Methods and HPC; 35 Attendees; May 14-18, 2012

King Abdullah University of Science and Technology:

1. AMCS 201 Applied Mathematics; 15 Students During Summer 2011

Columbia University:

1. E4302 Parallel Scientific Computing; 15 Students During Fall 2010
2. APAM4300 Numerical Methods; 95 Students During Spring 2011

Institute of Applied Physics and Computational Mathematics, Beijing

1. Parallel Computing Summer School; 50 Attendees; July 1-31, 1997

Hong Kong University of Science and Technology:

1. MATH 2023 Multivariable Calculus; 46 Students During Fall 1995
2. Parallel Computing Summer School; 35 Attendees During Summer 1994

Patents

1. An Ultra-scalable Supercomputer Based on MPU Architecture; Pub No. US 2009/0094436 A1; Patent Date: Apr 17, 2012; Inventors: Y. Deng, A. Korobka, and P. Zhang (in PDF)
2. System for Balance Distribution of Requests Across Multiple Servers Using Dynamic Metrics; Patent No.: US 6,938,256 B2; Pub. No.: US 2006/0036743 A1; Inventors: Y. Deng, S. Engel, J. Guistozzi, and T. O'Brien (in PDF)
3. Method and System for Providing Dynamic Hosted Service Management Across Disparate Accounts and Sites; Patent No.: US 7,693,9935 B2; Inventors: K. Sheets, Y. Deng, et al (in PDF)
4. A Mixed Torus and Hypercube Multi-rank Tensor Expansion Method. Patent No.: 2009/0024829 A1, Pub. Date: Jan. 22, 2009; Inventors: Y. Deng and P. Zhang (in PDF)
5. A Master Processing Unit with Self-consistent Expandable Internal and External Networks. China Patent No.: ZL 2006 1 0029753.0 (Granting date: 5/10/2010); Inventors: Y. Deng and P. Zhang
6. A Self-Consistent Multi-rank Tensor Expansion Scheme and Multi-MPU Parallel Computing Systems. China Patent No.: ZL 2006 1 0030472.7 (Granting date: 4/7/2010); Inventors: Y. Deng and P. Zhang.
7. Routing Strategies for Cellular Networks in MPU Architectures. China Patent Application No.: 200610117704.2 (2006); China Patent No.: ZL 2006 1 0117704.2 (Granting date: 10/28/2009); Inventors: P. Zhang and Y. Deng.
8. A Mixed Torus and Hypercube Multi-rank Tensor Expansion Method. US Patent No.: US8510535 B2 (08/13/2013); Inventors: Y. Deng and P. Zhang
9. A MPU with Self-consistent Expandable Networks. US Patent Application No.: 11833994 (08/04/2007); Inventors: Y. Deng and P. Zhang
10. A Tensor Expansion Scheme and Multi-MPU Systems. US Patent Application No.: 11845014 (08/24/2007); Inventors: Y. Deng and P. Zhang.
11. Routing Strategies for Cellular Networks in MPU Architecture. US Patent Application No.: 11925944 (11/06/2007); Inventors: Y. Deng and P. Zhang.
12. A Class of Interlaced Bypass Torus Networks. US Patent Application No.: US 13/773,959 (02/22/2013); Inventors: P. Zhang and Y. Deng (in PDF)

Community Service

University Service:

1. Associate Dean, International Academic Programs; 2011-2013

2. Associate Director, Institute Engineering-Driven Medicine; 2019-
3. Member, University Scholarships and Awards Committee; 2011-2014

Professional Service:

1. Co-Chair of the Supercomputing Frontiers 2015 Conference in Singapore (March 17-20, 2015)
2. Guest Editor of International Journal of Supercomputing Frontiers and Innovations (September 2015 Issue)
3. Chair of the International Conference in Scientific Computing, Nankai University, China; March 2004
4. Supervisor of Intel Science Talent Search Award Finalists, 2011, 2012, 2013, 2014
5. Supervisor of Siemens Science Competition Regional Finalists, 2013, 2014, 2015.
6. Outstanding Teacher Awards for 2004, 2005, 2009, 2010, Spring 2011, Fall 2011, Spring 2012, Fall 2012, Spring 2013, 2014, Spring 2015, 2016, 2017, 2018, 2019
7. Supervisor of James Simons Scholars, 2009, 2014, 2015
8. Certificate of Service to Mentor Program, 1993,1994,1996,1997
9. Supervisor of a Westinghouse Award Finalist, 1993

Former and Current Students

Ph.D. Students:

1. Karin Hasegawa (Ph. D. student, starting 6/2020, Stony Brook Univ.), *TBD*
2. Ziyuan Niu (Ph. D. student, starting 8/2019, Stony Brook Univ.), *TBD*
3. Yicong Zhu (Ph. D. candidate, starting 6/2020, Stony Brook Univ.), *Machine-Learning Algorithms and Implementation on Supercomputers for Accelerating Multiscale Modeling*
4. Ziji (Jason) Zhang (Ph. D. candidate, starting 2/2019, Stony Brook Univ.), *Simulation-Driven Discovery of Knowledgebase of (3+1)-Dimensional Digital Cells*
5. Hong Wang (Ph. D. candidate, starting 9/2017, Stony Brook Univ.), *Adversarial attack and defense for image classification*
6. Changnian (Gary) Han (Ph. D. candidate, starting 9/2015, Stony Brook Univ.), *Adaptive time stepping modeling of platelets*
7. Xiaolong Huang (Ph. D. candidate, starting 9/2016, Stony Brook Univ.), *Design of interconnection network topologies using graph theory*
8. Dr. Prachi Gupta (Ph. D., 8/2020), *A Multiscale Model Correlated with In Vitro Data for Multiple Platelet Aggregation in Shear Flows*
9. Dr. Lihao Zhang (Ph. D., 8/2020), *Analysis and applications of parallel simulated annealing*
10. Dr. Zeyang (Ben) Ye (Ph. D., 5/2020), *Route Recommendations by parallel simulated annealing*
11. Dr. Na Zhang (Ph. D. 10/2015), *Design and analysis of parallel algorithms for multiscale modeling of platelets*
12. Dr. Seetha Pothapragada (Ph. D., 3/2015), *Modeling Platelets on Parallel Computers*

13. Dr. Peng Zhang (Ph. D., 2012), *A Methodology for Design and Applications of Parallel Computers*
14. Dr. Riwei Wang (Ph. D., 2011, for Nankai University), *Efficient Parallel Algorithms for Multi-scale Collocation Physically Realistic Light Rendering*
15. Dr. Yuxiang Gao (Ph. D., 2010), *An algebraic representation of the task mapping for parallel computing*
16. Dr. Reid Powell (Ph. D., 2010), *Analysis of supercomputers and development of a novel network*
17. Dr. Yongzhi Chen (Ph. D., 2008), *Task Mapping on Supercomputers with Cellular Networks*
18. Dr. Bin Fang (Ph. D., 2007), *Parallel FFT Algorithms and Their Applications to MD*
19. Dr. Xin Chen (Ph. D., 2007, Physics), *MD Modeling of a Biotoxin in Various Temperature and pH Environments and Another Protein Interacting with Small Molecules*
20. Dr. Janet Braunstein (Ph. D., 2007), *Analysis of Task Mapping for Parallel Supercomputers*
21. Dr. Peter Rissland (Ph. D., 2006), *MDOC: A Molecular Dynamics Application Framework for the QCDOC Supercomputer*
22. Dr. Guowen Han (Ph. D., 2006), *Analysis of Multi-scale Molecular Dynamics Algorithms for Simulating Biomolecules*
23. Dr. Alex Korobka (Ph. D., 2002), *Protein-DNA Binding Simulation on Parallel Computers*
24. Dr. King-Wai Chu (Ph. D., 2001), *Optimal Parallelization of Simulated Annealing by State Mixing*, Co-supervised with J. Reinitz
25. Dr. Chung-Chiang Chou (Ph. D., 1996), *Comparison of Several Parallel Simulated Annealing Methods*
26. Dr. Yuan Wang (Ph. D. 1996), *Inventory Modeling on Parallel Processors*
27. Dr. R. Alan McCoy (Ph. D., 1995), *Parallel MD for Film Deposition*
28. Dr. Jose Gomezva (Ph. D., 1994), *Parallel Algorithms for Circulation Models*, Co-supervised with D. P. Wang (Stony Brook Marine Science)

MS Students:

1. Wang Fang (MS, 2007 Nankai University; Texas A&M), *Benchmark Two Applications on Supercomputers of Various Networks*
2. Yang Liang (MS, 2007 Nankai University), *Benchmark Molecular Dynamics NAMD on MPU*
3. Min Xuebin (MS, 2006 at Nankai University), *Analysis and simulation of the MPU Mesh Network*
4. Carlos Rivera (MS, 1999), *Load Balance and Automatic Mesh Refinement*
5. Konstantin Strauch (MA, 1995), *Genetic Linkage Analysis of Complex Diseases*, Co-supervised with M. Wigler (Cold Spring Harbor Lab)
6. Dr. Yue Zhuge (MA, 1994; Ph.D. 1998 at Stanford University), *Parallel Front Tracking*

Recent Undergraduate Students (Estimated Total 35 Since 1990):

1. Kaitlyn Swayze (Summer and fall, 2020), *Modeling SARS-CoV2 in Saline H2O*

2. Bernard Essuman (Summer and fall, 2019), *Modeling of Fibrinogen on PLA*
3. Yidan Zhang (Summer and fall, 2019), *Graphs*
4. Yundai Hu (Summer, 2017), *Network Topologies*
5. Yuri Mu (Spring, Summer and Fall, 2015), *Applied Mathematics and Economics*
6. Nam Nyuyen (Summer and Fall, 2015), *Physics*
7. Jessica Flores (Fall, 2015), *Applied Mathematics and Physics*
8. Changnian Han (Spring 2012; Summer 2015), *Applied Mathematics and Physics*
9. Xinwei Feng (Spring and Fall 2015), *Applied Mathematics*
10. Jessica Mele (Fall 2015), *Applied Mathematics and Computer Science*

Recent High School Students (Estimated Total 300 Since 1990):

1. Abishek Ravindran (Summer 2018-2019, Regeneron STS 2020)
2. Chelsea Chen (Summer 2016-2017, Harvard)
3. Sunay Joshi (Summer 2019, Simons Scholar, Princeton)
4. Talia Blum (Summer 2015-2016, MIT)
5. Sahil Chaudhry (Summer 2015, Siemens Semifinalist)
6. Rahul Chaudhry (Summer 2015, Siemens Semifinalist)
7. Ryan Abbott (Summer 2014, Siemens Semifinalist)
8. Arjun Kapoor (2013 2014, Siemens Semifinalist and Regional Finalist, The University of Chicago)
9. Connor Abbott (Summer 2013, Siemens Regional Finalist, Columbia University)
10. Sahil Abbi (Summer 2013, Siemens Regional Finalist, Yale University)
11. Mustafa Ansari (Summer 2012, Siemens Semifinalist)
12. Kevin Huang (Summer 2012, Siemens Semifinalist, Harvard University)
13. Vijay Viswanathan (Simons Scholar, Summer 2011, Siemens Regional Finalist; BA, Carnegie Mellon University)
14. Jonathan Goldman (Simons Scholar, Summer 2010; BA, Carnegie Mellon University; Google, Inc.)

Textbooks

1. Y. Deng, *Lectures, Problems and Solutions for Ordinary Differential Equations*, 2nd Edition, ISBN: 978-981-3226-12-8;World Scientific (© Copyright 2018).
2. Y. Deng, *Lectures, Problems and Solutions for Ordinary Differential Equations*, 1st Edition, ISBN: 978-981-4632-24-9;World Scientific (© Copyright 2015).
3. Y. Deng, S. Amir and C. Han, *Lectures on Introductory Partial Differential Equations*, ISBN: 978-3-659-75354-1; Lambert Academic Publishing (© Copyright 2015).
4. Y. Deng, *Applied Parallel Computing*, ISBN: 978-981-4307-60-4; World Scientific (© Copyright 2013).

Publications

1. C. Han, P. Zhang, D. Bluestein, G. Cong, Y. Deng, *Artificial intelligence for accelerating time integrations in multiscale modeling*, **J. Computational Physics**, Vol. 427 (2021). DOI: 10.1016/j.jcp.2020.110053

2. Zhang, P., Sheriff, J., Einav, S., Slepian, MJ., Deng, Y., Bluestein, D., *A Predictive Multiscale Model for Simulating Flow-Induced Platelet Activation: Correlating in silico Results with In Vitro Results*, ***Journal of Biomechanics***, Vol. 117 (2021). DOI: 10.1016/j.jbiomech.2021.110275
3. Z. Zhang, P. Zhang, P. Wang, J. Sheriff, D. Bluestein, Y. Deng, *Rapid analysis of streaming platelet images by semi-unsupervised learning*, **Computerized Medical Imaging and Graphs,** (2021) DOI: https://doi.org/10.1016/j.compmedimag.2021.101895
4. P. Gupta, P. Zhang, J. Sheriff, D. Bluestein, Y. Deng, *A multiscale model for multiple platelet aggregation in shear flows*, **Biomechanics and Modeling in Mechanobiology** Vol. 20, pp. 1013-1030 (2021). DOI: 10.1007/s10237-021-01428-6
5. Y. Zhu, P. Zhang, C. Han, G. Cong, Y. Deng, *Enabling AI-accelerated multiscale modeling of thrombogenesis at milliseconds and molecular resolutions on supercomputers*, In: Chamberlain B.L., Varbanescu AL., Ltaief H., Luszczek P. (eds) High Performance Computing. **ISC High Performance 2021**. Lecture Notes in Computer Science, Vol. 12728. Springer, Cham. DOI: https://doi.org/10.1007/978-3-030-78713-4_13
6. J. Sheriff, P. Wang, P. Zhang, Z. Zhang, Y. Deng, and D. Bluestein, *In Vitro Measurements of Shear-Mediated Platelet Adhesion Kinematics as Analyzed through Machine Learning*, **Annals of Biomedical Engineering** (2021). DOI: https://doi.org/10.1007/s10439-021-02790-3
7. Y. Deng, M. Guo, A. Ramos, X. Huang, Z. Xu, and W. Liu, *Optimal low-latency network topologies for cluster performance enhancement*, **J. Supercomputing**, Vol. 76 Issue 12 (2020). DOI: 10.1007/s11227-020-03216-y
8. Y. Zhang, X. Huang, Z. Xu, and Y. Deng, *A structured table of graphs with symmetries and other special properties*, **Symmetry 2020** Vol. 12 Issue 1 p.2. DOI: 10.3390/sym12010002
9. Z. Xu, X. Huang, F. Jimenez, and Y. Deng, *A new record of graph enumeration enabled by parallel processing*, **Mathematics 2019** Vol. 7 Issue 12 p.1214; Special Issue of Supercomputing and Mathematics (2019). DOI: 10.3390/math7121214
10. P. Gupta, P. Zhang, J. Sheriff, D. Bluestein, and Y. Deng, *A multiscale model of recruitment aggregation of platelets by correlating with in vitro results*, **Cellular and Molecular Bioengineering,** Vol. 12 No. 4 (2019) pp 327-343. DOI: 10.1007/s12195-019-00583-2
11. S.-D. Liang, H. Li, and Y. Deng, *Mechanism of dynamic phase transition and synchronous stability in Hindmarsh–Rose neuronal network*, **Int. J. Mod. Phys. B;** Vol. 32 No. 28 (2018). DOI: 10.1142/S0217979218503083
12. L. Zhang, Z. Ye, and Y. Deng, *Parallel MCMC method for optimization*, **Monte Carlo Methods and Applications,** (2018). DOI**:** 10.1515/mcma-2019-2043
13. Z. Ye, K. Xiao, and Y. Deng, *A unified theory of the mobile sequential recommendation problem*, **Proceedings** of the 2018 IEEE International Conference on Data Mining, IEEE ICDM 2018 (November 17-20, 2018 in Singapore)
14. Yazdani A., **Zhang P.,** Sheriff J., Slepian M.J., Deng Y., Bluestein D. (2018), *Multiscale Modeling of Blood Flow-Mediated Platelet Thrombosis*, In: Andreoni W.,

Yip S. (eds) **Handbook of Materials Modeling**. Springer Nature 2018. DOI: 10.1007/978-3-319-50257-1_69-1

15. Z. Ye, L. Zhang, K. Xiao, W. Zhou, Y. Ge, and Y. Deng, *Multiuser Mobile Sequential Recommendations: An Efficient Parallel Computing Paradigm.* Proceedings of ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD'18). ACM, New York, NY, USA, Article 4, 9 pages.
16. A. Sabino, M. Vasconcelos, Y. Deng, A. Ramos, *Symmetry-guided design of topologies for supercomputer networks,* **Int. J. Mod. Phys. C;** Vol. 29 (2018) pp. 1-17. DOI: 10.1142/S0129183118500481
17. C. Gao, P. Zhang, G. Marom, Y. Deng, and D. Bluestein, *Reducing the effects of compressibility in DPD-based blood flow simulations through severe a stenotic microchannel*, **Journal of Comp. Phys.**; Vol. 335 (2017) pp. 812-827. DOI: 10.1016/j.jcp.2017.01.062
18. P. Zhang, L. Zhang, M. Slepian, Y. Deng, and D. Bluestein, *A multi-scale model of platelets:* correlating with in-vitro results, **Journal of Biomechanics**; Vol. 60 (2017) pp. 26-33. DOI: 10.1016/j.jbiomech.2016.11.019
19. Y. Deng and L. Zhang, *Perspectives on Exascale-Era Computing*, **China Science and Technology Review**, 2016, 34 (21): 85-94; DOI: 10.3981/j.issn.1000-7857.2016.21.012; http://www.kjdb.org/CN/Y2016/V34/I21/85
20. Z. Ye, K. Xiao, Y. Deng, and Y. Ge, *applying simulated annealing and parallel computing to the mobile sequential recommendation*, **IEEE Transaction on Knowledge and Data Engineering (TKDE)**; Vo. 31 Issue 2 (2019) pp. 243-256. DOI: 10.1109/TKED.2018.2827047
21. Z. Ye, K. Xiao, and Y. Deng, *Investigation of Simulated Annealing Cooling Schedule for Mobile Recommendations,* The **ICDM Workshop** on Data Mining and Human Mobility Computing, November 2015 Atlantic City, NJ. Conference Paper; DOI: 10.1109/ICDMW.2015.226
22. P. Zhang, C. Cao, N. Zhang, M. J. Slepian, Y. Deng, D. Bluestein, *A Predicative Multiscale Model for Simulating Platelets Activation in Shear Flows*, **2015 BMES Annual Meeting**, October 7-10, 2015. Tampa, FL. Conference Paper
23. M. Michalewicz, L. Orlowski, and Y. Deng, *Creating interconnect topologies by algorithmic edge removal: MOD and SMOD graphs*, **International Journal of Supercomputing Frontiers and Innovations,** Vol. 2 No. 4 **(**2015) pp. 16-47. DOI: 10.14529/jsfi150302
24. P. Zhang, N. Zhang, Y. Deng, and D. Bluestein, *Scalability Test of Multiscale Fluid-Platelet Model for Three Top Supercomputers*, **Computer Physics Communications** Vol. 204 (2016) pp. 132-140. DOI: 10.1016/j.cpc.2016.03.019
25. L. Zhang, K. Xiao, Q. Liu, Y. Tao, and Y. Deng, *Modeling Social Attention for Stock Analysis: An Influence Propagation Perspective,* The 15th IEEE International Conference on Data Mining, **ICDM 2015**, Atlantic City, NJ 2015 (Accepted 8/2015. Regular paper. Acceptance rate: 8.4%)
26. Zhang, P., Sheriff, J., Soares, J.S., Gao, C., Pothapragada, S., Zhang, N., Deng, Y., Bluestein, D. *Multiscale Modeling of Flow Induced Thrombogenicity Using Dissipative Particle Dynamics and Coarse-Grained Molecular Dynamics.* **Proceedings of the ASME 2013 Summer Bioengineering Conference,** Sunriver, Oregon, June 26-29, 2013. DOI: 10.1115/SBC2013-14187

27. Bluestein, D., Soares, J.S., Zhang, P., Gao, C., Pothapragada, S., Zhang, N., Slepian, M.J., Deng, Y. *Multiscale Modeling of Flow Induced Thrombogenicity with Dissipative Particle Dynamics (DPD) and Molecular Dynamics (MD).* **Proceedings of the ASME/FDA 2013 1st Annual Frontiers in Medical Devices: Applications of Computer Modeling and Simulation FMD 2013**, Washington, D.C., September 11-13, 2013. DOI: 10.1115/FMD2013-16176
28. Bluestein, D., Soares, J.S., Zhang, P., Gao, C., Pothapragada, S., Zhang, N., Slepian, M.J., Deng, Y. Multiscale Modeling of Flow Induced Thrombogenicity Using Dissipative Particle Dynamics and Molecular Dynamics. **Proceedings of the ASME 2013 2nd Global Congress on NanoEngineering for Medicine and Biology**, Boston, Massachusetts, USA, February 4–6, 2013. DOI: 10.1115/NEMB2013-93094
29. A. Sedighi, Y. Deng, and P. Zhang, *Fairness of task scheduling in high performance computing environments,* **Scalable Comp: Practice and Experience**, Vol. 15 Num. 3 (2014) 273-288
30. P. Zhang, C. Gao, N. Zhang, M. J. Slepian, Y. Deng, and D. Bluestein, *Multiscale Particle-Based Modeling of Flowing Platelets in Blood Plasma Using Dissipative Particle Dynamics and Coarse-Grained Molecular Dynamics*, **Cellular and Molecular Bioengineering**, Vol. 7 No. 4 (2014) 552-574 DOI: 10.1007/s12195-014-0356-5
31. P. Zhang, N. Zhang, Y. Deng, and D. Bluestein, *A Multiple Time Stepping Algorithm for Multiscale Modeling of Platelets Flowing in Blood Plasma*, **Journal of Computational Physics**; Vol. 284 (2015) pp. 668-686; DOI: 10.1016/j.jcp.2015.01.004
32. P. Zhang and Y. Deng, R. Feng, X. Luo and J. Wu, *Evaluation of various networks configured by adding bypass or torus links,* **IEEE Trans. Parallel and Distributed Systems**, Vol. 26, No. 4 (2015) pp. 984-995; DOI: 10.1109/TPDS.2014.2315201
33. S. Pothapragada, P. Zhang, J. Sheriff, M. L., M. J. Slepian, Y. Deng, and D. Bluestein, *A Phenomenological Particle-Based Platelet Model for Simulating Filopodia Formation during Early Activation*, **International Journal for Numerical Methods in Biomedical Engineering,** Vol. 31, No. 3 pp 1-16 (2015); DOI: 10.1002/cnm.2702
34. P. Zhang, L. Zhao, J. Xu, Y. Deng, W. Zhu, and S. Wu, *PPSeq: A scalable parallel processing suite for sequence alignment,* **Bioinformatics**, (Submitted on 9/2014)
35. P. Zhang, L. Liu, and Y. Deng, *A data-driven paradigm for mapping problems*, **Parallel Comp**, Vol. 48 (2015) pp 108-124; DOI: 10.1016/j.parco.2015.05.002
36. N. Zhang, P. Zhang, W. Kang, D. Bluestein, and Y. Deng, *Parameterizing the Morse potential for coarse-grained modeling of blood plasma*, **Journal of Comp. Phys.**, Vol. 257 Part A (2014) pp. 726-736; DOI: 10.1016/j.jcp.2013.09.040
37. R. Feng, P. Zhang and Y. Deng, Deadlock-free Routing Algorithms *for 6D Mesh/iBT Interconnection Networks*, ***SNPD 2013***. 14th IEEE/ACIS International Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing (2013); DOI: 10.1109/SNPD.2013.43
38. Y. Deng, C. Marques, R. Powell and P. Zhang, *Analysis of power and Linpack efficiencies of the world's Top 500 supercomputers,* **Parallel Comp.** Vol. 39, Issues 6-7 (2013) pp. 271-279; DOI: 10.1016/j.parco.2013.04.007

39. R. Feng, P. Zhang, J. Davenport, and Y. Deng, *Network design considerations for Exascale supercomputers,* **International Conference on Parallel and Distributed Computing and Systems** (Peer-reviewed and Accepted 9/6/2012)
40. Y. Deng, A. Ramos, and J. Hornos, *Group theory insights for design of supercomputer network topologies,* **Int. J. Mod. Phys. B** Vol. 26 No. 31 (2012) 1250169 (7 pp). DOI: 10.1142/S021797921250169X
41. R. Feng, P. Zhang and Y. Deng, *Simulated Performance Evaluation of a 6D Mesh/iBT Interconnect*, ***SNPD 2012***. 13th ACIS International Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing (2012) pp.253-259
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