CURRICULUM VITAE

Danny Z. Chen

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Current Position

Professor, Computer Science and Engineering, University of Notre Dame.

Education

Ph.D. Computer Science, Purdue University, West Lafayette, Indiana, 1992.
Thesis: *Parallel Techniques for Paths, Visibility, and Related Problems.*
Thesis Advisor: Mikhail J. Atallah.

M.S. Computer Science, Purdue University, West Lafayette, Indiana, 1988.

B.S. Computer Science, University of San Francisco, California, 1985.

B.S. Mathematics, University of San Francisco, California, 1985.

Research Interests

- Computational Biomedicine
- Biomedical Imaging
- Algorithm Design, Analysis, and Implementation
- Computational Geometry
- Data Mining
- Machine Learning
- Parallel and Distributed Computation
- VLSI Design

Honors and Awards

- The 2021 Best Paper Award of the journal *IEEE Computer Graphics & Applications*, by the IEEE Computer Society Publications Board, for the paper "Reconstructing Unsteady Flow Data From Representative Streamlines via Diffusion and Deep-Learning-Based Denoising", by P. Gu, J. Han, D.Z. Chen, and C. Wang, *IEEE Computer Graphics and Applications*, Vol. 41, No. 6, November/December 2021, pp. 111-121.

- American Association for Anatomy (AAA) BioArt Winner of the Federation of American Societies for Experimental Biology (FASEB) BioArt Scientific Image & Video Competition, *AAA Virtual Annual Meeting Week*, April 6-10, 2020, for an image of automatically segmented cartilage and skin from a micro-CT scan of a mouse at embryonic day 14.5 (this image was used to examine how early cartilaginous structures serve as a structural and functional scaffold for development of the head), by S.M.M. Perrine, J.T. Richtsmeier, and K. Kawasaki of Pennsylvania State University, and D.Z. Chen and H. Zheng of University of Notre Dame.

- The 2017 PNAS Cozzarelli Prize of the National Academy of Sciences of the United States of America for the paper, "Three-dimensional Visualization and a Deep Learning Model Reveal Complex Fungal Parasite Networks in Behaviorally Manipulated Ants," by M. Fredericksen, Y. Zhang, M. Hazen, R. Loreto, C. Mangold, D.Z. Chen, and D. Hughes, *Proceedings of the National Academy of Sciences of the United States of America (PNAS)*, Vol. 114, No. 47, November 21, 2017, pp. 12590-12595. Six papers published in PNAS in 2017 were selected for this award for "outstanding scientific excellence and originality".

  http://www.pnas.org/page/about/cozzarelli-prize

  http://www.pnas.org/cozzarelliprizearticles

- The Outstanding Faculty Teaching Award, Department of Computer Science and Engineering, University of Notre Dame, 2012.

- Laureate Award of the 2011 Computerworld Honors Program, for his work on "Arc-Modulated Radiation Therapy". The program stated: "The program, founded in 1988, recognizes organizations and individuals who have used information technology to promote and advance public welfare, benefit society and change the world for the better."

- The "Close Runner-up" of the 2008 Roberts Prize for the best paper published in *Physics in Medicine and Biology* (PMB) in 2008. The PMB journal published 520 articles in 2008.

- The James A. Burns, C.S.C. Award for Graduate Education, University of Notre Dame, 2009.

- The Kaneb Teaching Award, Department of Computer Science and Engineering, University of Notre Dame, 2004.

- Rooney Family Associate Professor of Engineering, University of Notre Dame, August 2000 — August 2002.

- The NSF (National Science Foundation) Faculty Early Career Development (CAREER) Award, 1996.

- One of the two nominees of the University of Notre Dame for the NSF (National Science Foundation) Presidential Faculty Fellows (PFF) Awards, 1995.

- Clark Equipment Assistant Professor of Computer Science and Engineering, University of Notre Dame, for the 1994 — 1995 academic year.

- Nominee of the Department of Computer Sciences, Purdue University, for the ACM (Association for Computing Machinery) Best Doctoral Dissertation Award, 1993.

Professional Societies

- Fellow of the Institute of Electrical and Electronics Engineers (IEEE)

- Distinguished Scientist of the Association for Computing Machinery (ACM)

- ACM Special Interest Group on Automata and Computability Theory (SIGACT)
- Member of the American Association for the Advancement of Science (AAAS)

Professional Experience

- August 2002 — present: Professor of Computer Science and Engineering with tenure, University of Notre Dame.
- January 2011 — present: Concurrent Professor, Department of Applied and Computational Mathematics and Statistics, University of Notre Dame.
- April 2012 — May 2012: Visiting Professor, College of Computer Science, Zhejiang University, Hangzhou, China.
- February 2012 — March 2012: Visiting Professor, Institute for Interdisciplinary Information Sciences (IIIS), Tsinghua University, Beijing, China.
- January 2003 — July 2003: Visiting Professor, Department of Computer Science, Hong Kong University of Science and Technology (HKUST), Hong Kong.
- August 1998 — August 2002: Associate Professor of Computer Science and Engineering with tenure, University of Notre Dame.
- June 21 — July 17, 1996: Invited lecturer to the Center for Applied Science and Engineering and Institute of Information Science, Academia Sinica, Nankang, Taiwan. Giving lectures, and conducting research in computational geometry and parallel computation with several world leading experts in these fields and with researchers at the Academia Sinica.
- June 1 — July 31, 1994: Visiting the Max-Planck-Institut (MPI) fur Informatik in Saarbrucken, Germany. Conducting research in computational geometry and parallel computation with leading researchers at the MPI.
- August 1992 — August 1998: Assistant Professor, Dept. of Computer Science and Engineering, University of Notre Dame.

Supervision of Ph.D. Thesis Students

1. Robert J. Szczerba, "New Cell Decomposition Techniques for Planning Optimal Paths," August 1996 (with Dr. John J. Uhran, Jr. being a co-advisor; CEO and Founder of X Tech Ventures, LLC, NY; Senior Fellow Emeritus of Lockheed Martin Systems Integration).
2. Kevin S. Klenk, "On Geometric Optimal Path Query Problems," May 1998 (IT finance manager at JPL/NASA).
3. Ovidiu Daescu, "On Geometric Optimization Problems," May 2000 (award of Fellow of the Center for Applied Mathematics of the University of Notre Dame, 1998 — 1999; full professor with tenure, Department of Computer Science, University of Texas at Dallas, Texas, USA).
4. Jinhui Xu, "Arrangements, Algorithms, and Applications," August 2000 (awards of the 1999 Summer Graduate Research Fellowship and Fellow of the Center for Applied Mathematics of the University of Notre Dame, 1999 — 2000; full professor with tenure, Department of Computer Science and Engineering, State University of New York at Buffalo, New York, USA; received NSF CAREER Award).

5. Xiaodong Wu, "New Algorithmic Techniques for Partitioning and Covering Problems, with Applications," August 2002 (award of Fellow of the Center for Applied Mathematics of the University of Notre Dame, 2001 — 2002; full professor with tenure, Department of Electrical and Computer Engineering and Department of Radiation Oncology, University of Iowa, Iowa, USA; received NSF CAREER Award and NIH Career Award).

6. Yumin Zhang, "Low Power Design Techniques," August 2002 (co-advisor, with Dr. Xiaobo S. Hu being the advisor; Synopsis, Inc).

7. Shuang (Sean) Luan, 'Geometric Algorithms for Leaf Sequencing Problems in Intensity-Modulated Radiation Therapy," May 2004 (award of Fellow of the Center for Applied Mathematics of the University of Notre Dame, 2002 — 2003; full professor with tenure, Department of Computer Science and Department of Radiology, University of New Mexico, New Mexico, USA).

8. Chao Wang, "New Algorithms for Treatment Planning and Delivery Problems in Intensity-Modulated Radiation Therapy," August 2007 (two awards of Fellow of the Center for Applied Mathematics of the University of Notre Dame, 2004 — 2006; Opnet Technologies, Bethesda, MD).

9. Bin Xu, "New Algorithms for Spatial Data Clustering Problems," May 2008 (director, SymphonyIRI Group, Chicago).

10. Haitao Wang, "Algorithms and Data structures for Geometric Object Approximation Problems," May 2010 (award of Fellow of the Center for Applied Mathematics of the University of Notre Dame, 2009 — 2010; associate professor with tenure, School of Computing, the University of Utah, Utah, USA).

11. Ewa Misiolek, "Efficient Algorithms for Geometric Problems in Computer-Aided Manufacturing," May 2011 (award of 2004 Summer Graduate Fellowship of the Center for Applied Mathematics of the University of Notre Dame; associate professor with tenure, Mathematics Department, Saint Mary's College, Indiana, USA).

12. Xiaomin Liu, "Identification, Segmentation, and Analysis of Objects in Biomedical Images," August 2011 (award of Fellow of the Center for Applied Mathematics of the University of Notre Dame, 2009 — 2010, and award of Fellow of Applied and Computational Mathematics and Statistics, 2010 — 2011; computer vision scientist, Hologic, Inc., CA).

13. Jian Mu, "New Algorithms for Biomedical Image Processing and Computer Vision," January 2015 (location software engineer, Apple Inc., CA).

14. Kai Xiao, "GPU-based Acceleration Techniques: Algorithms, Implementations, and Applications," August 2015 (co-advisor with Dr. Xiaobo S. Hu; Intel Labs — Research).

15. Jiazhuo Wang, "New Approaches for Biological Structures Identification in Histology Tissue Images," August 2016 (senior research scientist, Blippar, Mountain View, CA).

16. Jianxu Chen, "New Approaches for Biomedical Image Segmentation, Cell Tracking and Related Applications," August 2017 (received the best graduate student poster award of the CSE Department, 2015; received the CSE Outstanding Research Assistant Award for 2015-2016; Research Group Leader, Leibniz-Institut Fur Analytische Wissenschaften - ISAS - e.V.).

17. Lin Yang, "New Deep Learning Based Approaches for Biomedical Image Segmentation and Related Problems," August 2018 (received the best graduate student poster award of the CSE Department, 2017; Google LLC, Mountain View, CA).

18. Shenglong Zhu, "Algorithms for Assembly Consolidation and Prediction of Large-Scale Genome Structures," January 2020 (co-advisor, with Dr. Scott Emrich; Amazon.com, Inc., Seattle, WA).

19. Yizhe Zhang, "New Algorithms and Deep Learning Methods for Object Detection and Segmentation for Biomedical Image Analysis," May 2020 (received the CSE Outstanding Teaching Assistant Award for 2015-2016; associate professor, School of Computer Science and Engineering, Nanjing University of Science and Technology, Nanjing, China).

20. Hao Zheng, "Data-Efficient and Robust Deep Learning Based Approaches for Biomedical Image Segmentation and Related Problems," May 2022 (co-advisor, with Dr. Chaoli Wang; received the Outstanding Research Assistant Award of the CSE Department, 2021; assistant professor, School of Computing & Informatics, University of Louisiana at Lafayette, LA).

21. Suraj Mishra, "Data-driven Approaches for Biomedical Image Analysis," May 2022 (co-advisor, with Dr. Xiaobo S. Hu; received the Outstanding Graduate Student Teacher Award of the Notre Dame Learning/Kaneb Center for Teaching Excellence and the Graduate School for 2019-2020; scientist, the Allen Institute for Cell Science, Seattle, Washington).

22. Hongxiao Wang, "Combining Images, Geometry, and Topology for Medical Data Processing and Analysis," August 2023 (received the Kaneb Center Outstanding TA Award of the CSE Department, 2019; assistant professor, Capital Normal University, Beijing, China).

23. Peixian Liang, "New Deep Learning Methods for Biomedical Image Segmentation and Related Problems," December 2023 (received the Outstanding Graduate Student Teacher Award of the Notre Dame Learning/Kaneb Center for Teaching Excellence and the Graduate School for 2021-2022; postdoc, University of Pennsylvania, Philadelphia, Pennsylvania).

24. Zhuo Zhao, "Annotation Efficient Deep Learning Methods for Problems in Biomedical Image Analysis," May 2024 (postdoc, University of Texas Southwestern Medical Center, Dallas, Texas).

25. Pengfei Gu, "New Deep Learning Methods for Medical Image Analysis and Scientific Data Generation and Compression," August 2024 (co-advisor, with Dr. Chaoli Wang; assistant professor, Department of Computer Science, The University of Texas Rio Grande Valley, Texas).

26. Yejia (Charley) Zhang, "New Deep Learning Methods for Annotation-efficient Medical Image Analysis," December 2024 (NVIDIA Corporation, CA).

27. Yaopeng Peng, "Efficient Deep Learning Methods for Medical Image Analysis," December 2024 (TikTok Inc., CA).

28. Nishchal Sapkota, in progress.

29. Xueyang Li, in progress (co-advisor, with Dr. Yiyu Shi).

30. Bofang Zheng, in progress.

31. Xianshi Ma, in progress.

32. Guangyu Meng, in progress (co-advisor, with Dr. Erin Chambers).

Supervision of Master's Thesis Students

1. Kevin S. Klenk, "Rectilinear Shortest Path Queries among Weighted Obstacles," December 1994.
2. Peter J. Blatner, "Approximating Orthogonal Polygons Using a Shortest Path Approach," May 1995.
3. Rebecca M. Hertenstein, "Improvement and Implementation of Algorithms for Approximating Two-Dimensional Polygonal Curves," May 1996.
4. Ovidiu Daescu, "Maintaining Visibility of a Polygon with a Moving Point of View," May 1997.
5. Yifan Li, "Algorithms for Congruent Disk Packing," December 2001.
6. Shuang Luan, "An Experimental Study and Comparison of Topological Peeling and Topological Walk," May 2002.
7. Ewa Misiolek, "Efficient Algorithms for Simplifying Flow Networks," December 2003.
8. Ying Du, "Approximation Algorithms for Multicommodity Flow and Normalized Cut Problems: Implementations and An Experimental Study," May 2004.
9. Keefe D. Roedersheimer, "A Study of the Impact of Multi-leaf Collimator Rotation," December 2005.
10. Joseph E. Lammersfeld, "Implementing Four-Dimensional Triangulations in CGAL," May 2006.
11. Jean-Philippe Douailly-Backman, "Neutrophil Identification in H&E Histology Tissue images Using FCN Models," December 2020.

Supervision of Postdoctoral Scholars

1. Yiping Lu, January — July 2002.
2. Bo Zhou, August 2006 — August 2009 (co-supervised with Xiaobo S. Hu).
3. Chao Wang, August 2007 — August 2008.
4. Chuancai Gu, February 2016 — January 2017.

Supervision of Undergraduate Research Projects

1. Joseph Bishay, "Implementation of a Robotic Motion Planning Algorithm," 1996 — 1997.
2. Demian M. Nave, "Implementation of Planar Point Location Algorithms," 1997.
3. Mark J. Harris, "Implementation of Randomized Planar Point Location Algorithms," 1997 — 1998.
4. Joel P. Hypolite, "Implementation of Polygon Triangulation Algorithms," 1997 — 1998.
5. Brent M. Hostrawser, "Algorithms and Graphics Software for Models of Growing Trees," 1998.

6. David A. Cieslak, "Collimator Minimum Area Algorithm," 2004.
7. Mark A. Healy, "Implementation of IMRT Algorithms," 2006 — 2007.
8. Yan Gu, International Summer Undergraduate Research Experience (iSURE), "Algorithms on Minimizing the Maximum Sensor Movement," summer 2011.
9. Yiqing Cai, International Summer Undergraduate Research Experience (iSURE), "Segmentation of Pseudomonas Aeruginosa for Cell Dynamics Analysis in Time-Lapse Images," summer 2015.
10. Chen Wei, International Summer Undergraduate Research Experience (iSURE), "Tracking of Pseudomonas Aeruginosa for Cell Dynamics Analysis in Time-Lapse Images," summer 2015.
11. James Dong, "GUI Development for Ant Tracking and Analysis," summer 2017.
12. Yejia (Charley) Zhang, "Using Convolutional Nets to Improve Semantic Segmentation," summer 2017.
13. Mo Zhou, University of Maryland, College Park, "Deep Learning Methods for Medical Image Segmentation," summer 2021.
14. Gabriel Sargent, "Computational Topology Methods for Biomedical Analysis Problems," summer 2021 — present.
15. Sirui Li, International Summer Undergraduate Research Experience (iSURE), "Sperm Head Morphology Classification," summer and fall 2023.
16. Zihan Zhao, International Summer Undergraduate Research Experience (iSURE), "Medical Image Classification with Segmentation Foundation Model," summer 2023.
17. Santiago Rodriguez, "3D Micro-CT Embryonic Cartilage Segmentation," spring 2024.
18. Zihao Zhao, International Summer Undergraduate Research Experience (iSURE), "Deep Learning Based Medical Image Classification and Segmentation," summer and fall 2024.
19. Xinran Li, International Summer Undergraduate Research Experience (iSURE), "Deep Learning Based Medical Image Classification and Segmentation," summer 2024.
20. Macdonald Zharima, AI Based Medical Image Analysis, fall 2024.
21. Swindar Keyang Zhou, AI Based Medical Image Analysis, fall 2024 – spring 2025.
22. Jack Mangione, AI Based analysis of surgical videos, fall 2024 – spring 2025.
23. Yohannes Mariam, AI Based processing of surgical videos, spring 2025.
24. Matthew Eleazar, AI Based processing of medical image datasets, spring 2025.

Supervision of High School Student Research Projects

1. Rajeev Datta, "Deep Learning Based Image Analysis for Crop Disease Development and Dynamics," January 2018 – August 2019.
2. Maria Jose Gomez, "Deep Learning Based Medical Image Analysis," June – August 2024.

Books and Monographs

1. *Proceedings of the 12th Annual International Computing and Combinatorics Conference (COCOON)*, Danny Z. Chen and D.T. Lee, eds., Lecture Notes in Computer Science, Vol. 4112, Springer Verlag, 2006.

2. *Proceedings of the 4th International Frontiers of Algorithmics Workshop (FAW)*, Danny Z. Chen, D.T. Lee, and Shi Ying, eds., Lecture Notes in Computer Science, Vol. 6213, Springer Verlag, 2010.

3. *Proceedings of 2019 International Workshops on Large-Scale Annotation of Biomedical Data and Expert Label Synthesis, and on Hardware Aware Learning for Medical Imaging and Computer Assisted Intervention (LABELS, HAL-MICCAI, and CuRIOUS)*, L. Zhou, N. Heller, Y. Shi, Y. Xiao, R. Sznitman, V. Cheplygina, D. Mateus, E. Trucco, X.S. Hu, Danny Z. Chen, M. Chabanas, H. Rivaz, and I. Reinertsen, eds., Lecture Notes in Computer Science, Vol. 11851, Springer, held in conjunction with *MICCAI 2019*, Shenzhen, China, October 13-17, 2019.

4. *Proceedings of the 36th International Symposium on Computational Geometry (SoCG 2020)*, Sergio Cabello and Danny Z. Chen, eds., June 23-26, 2020, Zurich, Switzerland. LIPIcs 164, Schloss Dagstuhl — Leibniz-Zentrum fur Informatik 2020, ISBN 978-3-95977-143-6 .

Book Chapters

1. M. J. Atallah and Danny Z. Chen, "Parallel Computational Geometry," *Parallel Computing: Paradigms and Applications*, A. Y. Zomaya (Eds.), International Thomson Computer Press, Boston, MA, 1996, pp. 162–197.

2. Danny Z. Chen, "Efficient Algorithms for Geometric Shortest Path Query Problems," *Handbook of Combinatorial Optimization*, Vol. 2, D.-Z. Du and P. M. Pardalos (Eds.), Kluwer Academic Publishers, Boston, MA, 1998, pp. 1–33.

3. M. J. Atallah and Danny Z. Chen, "Deterministic Parallel Computational Geometry," *Handbook on Computational Geometry*, J.-R. Sack and J. Urrutia (Eds.), Elsevier Science Publishers, Amsterdam, 1999, pp. 155–200.

4. Danny Z. Chen and J. Xu, "Sphere Packing and Medical Applications," Chapter 78 of the *Handbook of Approximation Algorithms and Metaheuristics*, T.F. Gonzalez (Eds.), Taylor & Francis Books (Chapman & Hall/CRC Press), New York, 2007, pp. 78.1–78.14.

5. Danny Z. Chen and C. Wang, "Algorithmics in Intensity-Modulated Radiation Therapy," *Algorithms and Theory of Computation Handbook, Volume II: Special Topics and Techniques*, 2nd edition, M.J. Atallah and M. Blanton (eds.), Chapman & Hall/CRC Press, Boca Raton, FL, 2010, pp. 7-1 – 7-22.

6. Y. Zhang, X.S. Hu, and Danny Z. Chen, "Energy Minimization for Multiprocessor Systems Executing Real-time Tasks," Chapter 23 of the *Handbook of Energy-Aware and Green Computing*, Vol. 1, I. Ahmad and S. Ranka (eds.), Chapman & Hall/CRC Computer & Information Science Series, 2012, pp. 519–542.

7. Danny Z. Chen, "Efficient Algorithms for Geometric Shortest Path Query Problems," *Handbook of Combinatorial Optimization*, 2nd Edition, P.M. Pardalos, D.-Z. Du, and R.L. Graham (eds.), Springer Science+Business Media, LLC, New York, 2016.

8. W. Wang, R. Feng, X. Liu, Y. Lu, Y. Wang, R. Guo, Z. Lin, T. Chen, Danny Z. Chen, and J. Wu, "Deep Active Self-paced Learning for Biomedical Image Analysis," *Deep Learning in Healthcare*, Y.W. Chen and L. Jain (eds), Intelligent Systems Reference Library, Vol. 171, Springer, Cham, 2020, pp. 95-110.

Journal Articles (published or accepted for publication)

1. M. J. Atallah and Danny Z. Chen, "An Optimal Parallel Algorithm for the Minimum Circle-Cover Problem," *Information Processing Letters*, Vol. 32, 1989, pp. 159–165.

2. M. J. Atallah, Danny Z. Chen, and H. Wagener, "An Optimal Parallel Algorithm for the Visibility of a Simple Polygon from a Point," *Journal of the Association for Computing Machinery*, Vol. 38, No. 3, July 1991, pp. 516–533.

3. M. J. Atallah and Danny Z. Chen, "Parallel Rectilinear Shortest Paths with Rectangular Obstacles," *Computational Geometry: Theory and Applications*, Vol. 1, No. 2, 1991, pp. 79–113.

4. M. J. Atallah and Danny Z. Chen, "On Parallel Rectilinear Obstacle-Avoiding Paths," *Computational Geometry: Theory and Applications*, Vol. 3, No. 6, 1993, pp. 307–313.

5. Danny Z. Chen and S. Guha, "Testing a Simple Polygon for Monotonicity Optimally in Parallel," *Information Processing Letters*, Vol. 47, No. 6, October 1993, pp. 325–331.

6. Danny Z. Chen, "Efficient Geometric Algorithms on the EREW PRAM," *IEEE Transactions on Parallel and Distributed Systems*, Vol. 6, No. 1, January 1995, pp. 41–47.

7. Danny Z. Chen, "Efficient Parallel Binary Search on Sorted Arrays, with Applications," *IEEE Transactions on Parallel and Distributed Systems*, Vol. 6, No. 4, April 1995, pp. 440–445.

8. Danny Z. Chen, "An Optimal Parallel Algorithm for Detecting Weak Visibility of a Simple Polygon," an **invited paper** in the Special Issues of the *International Journal of Computational Geometry and Applications* on Selected Papers from the *Eighth Annual ACM Symposium on Computational Geometry* (1992), Vol. 5, Nos. 1 & 2, 1995, pp. 93–124.

9. M. J. Atallah and Danny Z. Chen, "Optimal Parallel Hypercube Algorithms for Polygon Problems," *IEEE Transactions on Computers*, Vol. 44, No. 7, July 1995, pp. 914–922.

10. M. J. Atallah and Danny Z. Chen, "Computing the All-Pairs Longest Chains in the Plane," *International Journal of Computational Geometry and Applications*, Vol. 5, No. 3, 1995, pp. 257–271.

11. M. J. Atallah, Danny Z. Chen, and D. T. Lee, "An Optimal Algorithm for Shortest Paths on Weighted Interval and Circular-Arc Graphs, with Applications," *Algorithmica*, Vol. 14, No. 5, November 1995, pp. 429–441.

12. Danny Z. Chen and K. S. Klenk, "Rectilinear Short Path Queries among Rectangular Obstacles," *Information Processing Letters*, Vol. 57, No. 6, March 1996, pp. 313–319.

13. Danny Z. Chen, "Optimally Computing the Shortest Weakly Visible Subedge of a Simple Polygon," *Journal of Algorithms*, Vol. 20, No. 3, May 1996, pp. 459–478.

14. Danny Z. Chen and X.S. Hu, "Fast and Efficient Operations on Parallel Priority Queues," *Parallel Processing Letters*, Vol. 6, No. 4, December 1996, pp. 451–467.

15. Danny Z. Chen, R. J. Szczerba, and J. J. Uhran, Jr., "A Framed-Quadtree Approach for Determining Euclidean Shortest Paths in a 2-D Environment," *IEEE Transactions on Robotics and Automation*, Vol. 13, No. 5, October 1997, pp. 668–681.

16. Danny Z. Chen and O. Daescu, "Maintaining Visibility of a Polygon with a Moving Point of View," *Information Processing Letters*, Vol. 65, No. 5, March 1998, pp. 269–275.

17. Danny Z. Chen, R. J. Szczerba, and J. J. Uhran, Jr., "Planning Shortest Paths among 2D and 3D Weighted Regions Using Framed-Subspaces," *The International Journal of Robotics Research*, Vol. 17, No. 5, May 1998, pp. 531–546.

18. Danny Z. Chen, "Determining Weak Visibility of a Polygon from an Edge in Parallel," *International Journal of Computational Geometry and Applications*, Vol. 8, No. 3, June 1998, pp. 277–304.

19. Danny Z. Chen, W. Chen, K. Wada, K. Kawaguchi, "Finding the Convex Hull of Discs in Parallel," *International Journal of Computational Geometry and Applications*, Vol. 8, No. 3, June 1998, pp. 305–319.

20. Danny Z. Chen, D. T. Lee, R. Sridhar, and C. N. Sekharan, "Solving the All-Pair Shortest Path Query Problem on Interval and Circular-Arc Graphs," *Networks*, Vol. 31, No. 4, July 1998, pp. 249–257.

21. O. Aichholzer, F. Aurenhammer, Danny Z. Chen, D.T. Lee, and E. Papadopoulou, "Skew Voronoi Diagrams," *International Journal of Computational Geometry and Applications*, Vol. 9, No. 3, June 1999, pp. 235–247.

22. M. J. Atallah, Danny Z. Chen, and K. S. Klenk, "Parallel Algorithms for Longest Increasing Chains in the Plane and Related Problems," *Parallel Processing Letters*, Vol. 9, No. 4, 1999, pp. 511–520.

23. M.G. Andrews, M.J. Atallah, Danny Z. Chen, and D.T. Lee, "Parallel Algorithms for Maximum Matching in Complements of Interval Graphs and Related Problems," *Algorithmica*, Vol. 26, No. 2, 2000, pp. 263–289.

24. Danny Z. Chen, K. S. Klenk, and H.-Y. T. Tu, "Shortest Path Queries among Weighted Obstacles in the Rectilinear Plane," *SIAM Journal on Computing*, Vol. 29, No. 4, 2000, pp. 1223–1246.

25. Danny Z. Chen, W. Chen, K. Wada, and K. Kawaguchi, "Parallel Algorithms for Partitioning Sorted Sets and Related Problems," *Algorithmica*, Vol. 28, No. 2, 2000, pp. 217–241.

26. Danny Z. Chen, O. Daescu, X.S. Hu, X. Wu, and J. Xu, "Determining an Optimal Penetration among Weighted Regions in Two and Three Dimensions," *Journal of Combinatorial Optimization* for a Special Issue on Optimization Problems in Medical Applications, Vol. 5, No. 1, 2001, pp. 59–79.

27. Danny Z. Chen, G. Das, and M. Smid, "Lower Bounds for Computing Geometric Spanners and Approximate Shortest Paths," *Discrete Applied Mathematics*, Vol. 110, Nos. 2–3, 2001, pp. 151–167.

28. Danny Z. Chen and J. Xu, "An Efficient Direct Approach for Computing Shortest Rectilinear Paths among Obstacles in a Two-Layer Interconnection Model," *Computational Geometry: Theory and Applications*, Vol. 18, No. 3, 2001, pp. 155–166.

29. T. Asano, Danny Z. Chen, N. Katoh, and T. Tokuyama, "Efficient Algorithms for Optimization-Based Image Segmentation," *International Journal of Computational Geometry and Applications*, Vol. 11, No. 2, 2001, pp. 145–166.

30. X.S. Hu, Danny Z. Chen, and R. Sambandam, "Efficient List-Approximation Techniques for Floorplan Area Minimization," *ACM Transactions on Design Automation of Electronic Systems*, Vol. 6, No. 3, 2001, pp. 372–400.

31. M. J. Atallah and Danny Z. Chen, "On Connecting Red and Blue Rectilinear Polygonal Obstacles with Non-intersecting Monotone Rectilinear Paths," *International Journal of Computational Geometry and Applications*, Vol. 11, No. 4, 2001, pp. 373–400.

32. Danny Z. Chen, O. Daescu, and K. S. Klenk, "On Geometric Path Query Problems," *International Journal of Computational Geometry and Applications*, Vol. 11, No. 6, 2001, pp. 617–645.

33. Danny Z. Chen and J. Xu, "Two-Variable Linear Programming in Parallel," *Computational Geometry: Theory and Applications*, Vol. 21, No. 3, March 2002, pp. 155–165.

34. Y. Zhang, X.S. Hu, and Danny Z. Chen, "Efficient Global Register Allocation for Minimizing Energy Consumption," *ACM SIGPLAN Notices*, Vol. 37, No. 4, April 2002, pp. 42–53. (SIGPLAN stands for the ACM Special Interest Group on Programming Languages.)

35. G. Barequet, Danny Z. Chen, O. Daescu, M. T. Goodrich, and J. Snoeyink, "Efficiently Approximating Polygonal Paths in Three and Higher Dimensions," *Algorithmica*, Vol. 33, No. 2, February 2002, pp. 150–167.

36. Y. Zhang, X.S. Hu, and Danny Z. Chen, "Cell Selection from Technology Libraries for Minimizing Power," *Integration, The VLSI Journal*, Vol. 31, No. 2, May 2002, pp. 133–158.

37. Danny Z. Chen, X.S. Hu, and X. Wu, "Optimal Polygon Cover Problems and Applications," an **invited paper** in the Special Issue of the *International Journal of Computational Geometry and Applications* on Selected Papers from the *Eleventh Annual International Symposium on Algorithms and Computation* (2000), Vol. 12, No. 4, August 2002, pp. 309–338.

38. Danny Z. Chen, J. Wang, and X. Wu, "Image Segmentation with Asteroidality/Tubularity and Smoothness Constraints," *International Journal of Computational Geometry and Applications*, Vol. 12, No. 5, October 2002, pp. 413–428.

39. M. J. Atallah, Danny Z. Chen, and O. Daescu, "Efficient Parallel Algorithms for Planar *st*-Graphs," an **invited paper** in the Special Issue of *Algorithmica* on Selected Papers from the *Eighth Annual International Symposium on Algorithms and Computation* (1997), Vol. 35, No. 3, 2003, pp. 194–215.

40. Danny Z. Chen and O. Daescu, "Space-Efficient Algorithms for Approximating Polygonal Curves in Two Dimensional Space," *International Journal of Computational Geometry and Applications*, Vol. 13, No. 2, April 2003, pp. 95–111.

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277. Jiahuan Yan, Jintai Chen, Qian Xing Wang, Danny Z. Chen, and Jian Wu, "Team up GBDTs and DNNs: Advancing Efficient and Effective Tabular Prediction with Tree-hybrid MLPs," Research Track of the *Proc. of the 30th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, Barcelona, Spain, August 2024, pp. 3679-3689. https://doi.org/10.1145/3637528.3671964

278. Yejia Zhang, Hanqing Chao, Zhongwei Qiu, Nishchal Sapkota, Pengfei Gu, Danny Z. Chen, Le Lu, Ke Yan, and Dakai Jin, "IHCSurv: Effective Immunohistochemistry Priors for Cancer Survival Analysis in Gigapixel Multi-stain Whole Slide Images," *Proc. of the 27th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI)*, Part 4, Marrakesh, Morocco, October 2024, pp. 211-221.

279. Yixuan Wu, Kaiyuan Hu, Qian Shao, Jintai Chen, Danny Z. Chen, and Jian Wu, "TeleOR: Real-time Telemedicine System for Full-Scene Operating Room," *Proc. of the 27th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI)*, Part 6, Marrakesh, Morocco, October 2024, pp. 628-638.

280. Jinhong Wang, Jintai Chen, Danny Z. Chen, and Jian Wu, "LKM-UNet: Large Kernel Vision Mamba UNet for Medical Image Segmentation," *Proc. of the 27th International Conference*

on Medical Image Computing and Computer Assisted Intervention (MICCAI), Part 8, Marrakesh, Morocco, October 2024, pp. 360-370.

281. Zinan Lv, Dong Han, Wenzhe Wang, and Danny Z. Chen, "SinLane: Siamese Visual Transformer via Pyramid Feature Integration for Lane Detection," *Proc. of the 27th European Conference on Artificial Intelligence (ECAI)*, Santiago de Compostela, Spain, October 2024, pp. 137-144.

282. Yaopeng Peng, Milan Sonka, and Danny Z. Chen, "Group Vision Transformer," *Proc. of the 32nd ACM International Conference on Multimedia (MM)*, Melbourne, Australia, October 28 – November 1, 2024, pp. 2623-2631, https://doi.org/10.1145/3664647.3681709 .

283. Jinhong Wang, Yi Cheng, Jintai Chen, Hongxia Xu, Danny Z. Chen, and Jian Wu, "Multi-rater Prompting for Ambiguous Medical Image Segmentation," a regular paper in *Proc. of the 2024 IEEE International Conference on Bioinformatics and Biomedicine (BIBM)*, Lisbon, Portugal, December 2024, pp. 2519-2525, DOI: 10.1109/BIBM62325.2024.10822080 .

284. Zinan Lv, Dong Han, Wenzhe Wang, and Danny Z. Chen, "A Siamese Transformer with Hierarchical Refinement for Lane Detection," *Proc. of the 38 Annual Conference on Neural Information Processing Systems (NeurIPS)*, Vol. 37, Vancouver, Canada, December 2024, pp. 40892-40912.

    https://proceedings.neurips.cc/paper_files/paper/2024/file/480150047ecb2187a3a8b8dccfd8f2de-Paper-Conference.pdf .

285. Delin An, Pengfei Gu, Milan Sonka, Chaoli Wang, and Danny Z. Chen, "Sli2Vol+: Segmenting 3D Medical Images Based on an Object Estimation Guided Correspondence Flow Network," *Proc. of the IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)*, Tucson, Arizona, February 28 – March 4, 2025, pp. 3624-3634.

286. Yaopeng Peng, Milan Sonka, and Danny Z. Chen, "U-Net v2: Rethinking the Skip Connections of U-Net for Medical Image Segmentation," *Proc. of the 22nd IEEE International Symposium on Biomedical Imaging (ISBI)*, Houston, Texas, April 2025, pp. 1-5.

    https://doi.org/10.1109/ISBI60581.2025.10980742

287. Yaopeng Peng, Milan Sonka, and Danny Z. Chen, "Spectral U-Net: Enhancing Medical Image Segmentation via Spectral Decomposition," *Proc. of the 22nd IEEE International Symposium on Biomedical Imaging (ISBI)*, Houston, Texas, April 2025, pp. 1-5.

    https://doi.org/10.1109/ISBI60581.2025.10981199

288. Jinhong Wang, Jintai Chen, Jian liu, Dongqi Tang, Wentong Li, Weiqiang Wang, Danny Z. Chen, and Jian Wu, "DAR: Scalable Autoregressive Monocular Depth Estimation," accepted to the *IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR)*, Nashville, Tennessee, June 2025.

289. Pengfei Gu, Haoteng Tang, Jose A Nunez, Fabian Vazquez, Diego Adame, Bin Fu, and Danny Z. Chen, "Adapting a Segmentation Foundation Model for Medical Image Classification," accepted to the *38th IEEE International Symposium on Computer-Based Medical Systems (CBMS)*, Madrid, Spain, June 2025.

290. Hanjing Zhou, Mingze Yin, Danny Z. Chen, Jian Wu, and Jintai Chen "Groupo-On: Boosting One-Shot Segmentation with Supportive Query," accepted to the *IEEE International Conference on Multimedia & Expo (ICME)*, Nantes, France, June 30 – July 4, 2025.

291. Xueyang Li, Han Xiao, Zongpeng Weng, Xinrong Hu, Danny Z. Chen, Yiyu Shi, "PCA-YOLO: A Small Liver Tumor Detection Model with Patch-Contrastive Attention," accepted to the *8th International Conference on Medical Imaging with Deep Learning (MIDL)*, Salt Lake City, Utah, July 2025.

292. Chunlai Dong, Haochao Ying, Qibo Qiu, Jinhong Wang, Danny Z. Chen, and Jian Wu, "Dual-level Fuzzy Learning with Patch Guidance for Image Ordinal Regression," accepted to the *34th International Joint Conference on Artificial Intelligence (IJCAI)*, Montreal, Canada, August 16-22, 2025.

293. Jinhong Wang, Shuo Tong, Jintai Chen, Jian liu, Dongqi Tang, Weiqiang Wang, Wentong Li, Hongxia Xu, Danny Z. Chen, and Jian Wu, "OrderChain: A General Prompting Paradigm to Improve Ordinal Understanding Ability of MLLM," accepted to the *International Conference on Computer Vision (ICCV)*, Honolulu, Hawaii, October 19-23, 2025.

Research Grants and Contracts

1. "A.I. Powered Real-time 3D Label-free Intraoperative Tissue Imaging and Recognition with Hyperspectral Shortwave Infrared Light-field Imaging," Advanced Research Projects Agency for Health (ARPA-H), Award Number: AY2AX000049, $22,294,342 (the portion for D.Z. Chen is $1,312,536), August 12, 2024 — August 11, 2029. This is a joint grant with Zhongming Li (Lead PI, Cision Vision, CA), Lisa Konwlton (Lead PI, Stanford University), and other collaborators at Massachusetts Institute of Technology, Stanford University, Johns Hopkins University, and University of Chicago.

2. "Collaborative Research: SHF: Medium: A Comprehensive Modeling Framework for Cross-Layer Benchmarking of In-Memory Computing Fabrics: From Devices to Applications," NSF Grant CCF-2212239, $921,514, September 1, 2022 — August 31, 2026. This is a joint grant with Michael T. Niemier (PI), University of Notre Dame.

3. "Deep LOGISMOS," NIH Grant 2R56EB004640-16, The National Institute of Biomedical Imaging and Bioengineering (NIBIB), the National Institutes of Health (NIH), September 19, 2023 – August 31, 2024. This is a joint grant with Milan Sonka (LPI), J.M. Buatti (LPI), and Xiaodong Wu at University of Iowa. The amount for the University of Notre Dame: $107,750.00.

4. "Phase 1 IUCRC University of Notre Dame: Center for Alternative Sustainable and Intelligent Computing (ASIC)," NSF Grant CNS-1822099, $149,999, September 15, 2022 — August 31, 2024. This is a joint grant with Yiyu Shi (PI) and Michael T. Niemier, University of Notre Dame.

5. "OAC Core: A Machine Learning Assisted Visual Analytics Approach for Understanding Flow Surfaces," NSF Grant OAC-2104158 and Supplement, $531,907, January 1, 2022 — December 31, 2024. This is a joint grant with Chaoli Wang (PI) and Jian-Xun Wang, University of Notre Dame.

6. "Deep LOGISMOS," NIH Grant R01 EB004640, The National Institute of Biomedical Imaging and Bioengineering (NIBIB), the National Institutes of Health (NIH), $1,598,769, September 15, 2019 – May 31, 2024. This is a joint grant with Milan Sonka (LPI), J.M. Buatti (LPI), and Xiaodong Wu at University of Iowa.

7. "Mechanisms of Neuroinflammation in Brain Metastasis Progression," NIH Grant R01 CA222405, The National Cancer Institute (NCI), the National Institutes of Health (NIH), $1,871,299,

July 1, 2018 – June 30, 2024. This is a joint grant with Siyuan Zhang (LPI), Jun Li, and Gary Landreth (Indiana University School of Medicine).

8. "The Chondrocranium in Craniofacial Development and Disease," NIH Grant 1 R01 DE027677-01, the National Institute of Dental and Craniofacial Research (NIDCR), the National Institutes of Health (NIH), $2,520,262, February 1, 2018 – January 31, 2025. This is a joint grant with Joan T. Richtsmeier (LPI), Timothy Ryan, and Kazuhiko Kawasaki at Penn State University.

9. "PPoSS: Planning: S3-IoT: Design and Deployment of Scalable, Secure, and Smart Mission-Critical IoT Systems," NSF Grant CCF-2028879, $32,718, October 1, 2020 — September 30, 2022.

10. "Computer-aided Cancer Diagnosis Approaches Using Ultrasound Images of Cervical Lymph Nodes," the Global Collaboration Initiative (GCI) Program, Notre Dame International Office, University of Notre Dame, $20,000, July 1, 2017 – June 30, 2018.

11. "Exploiting TrueNorth for Biomedical Image Analysis Applications Based on New Deep Neural Network Models," IBM, $60,000 (plus a TrueNorth hardware system), January 15, 2017 – January 14, 2018. This is a joint grant with Xiaobo S. Hu (PI), Michael Niemier, and Yiyu Shi.

12. "E2CDA: Type I: Extremely Energy Efficient Collective Electronics (EXCEL)," the National Science Foundation (NSF) and Semiconductor Research Corporation (SRC), Grant CCF-1640081, $4,419,225, October 3, 2016 – October 2, 2019. This is a joint grant with Suman Datta (LPI), Zoltan Toroczkai, Justin Romberg (Georgia Institute of Technology), Narayanan Vijay (Penn State University), Xiaobo S. Hu, Arijit Raychowdhury (Georgia Institute of Technology), Gert Cauwenberghs (University of California San Diego), Emre Neftci (University of California, Irvine), Supratik Guha (University of Chicago), Wolfgang Porod, Michael Niemier, and Santosh S. Vempala (Georgia Institute of Technology).

13. "II-New: Infrastructure for Supporting Biomedical Application Algorithms, Runtime Development and Resource Management," the National Science Foundation (NSF), Grant CNS-1629914, $500,000, August 1, 2016 – July 31, 2019. This is a joint grant with X.S. Hu (LPI), N. Chawla, W. Scheirer, and C. Wang.

14. "AF: Small: Algorithms in Computational Geometry and Medical Applications," the National Science Foundation (NSF), Grant CCF-1617735, $450,000, September 1, 2016 – August 31, 2019 (extended to 8/31/2021).

15. "Unified Culex Assemblies for Improved Population-level Analysis," NIH Grant R21AI123967, The National Institute of Allergy and Infectious Diseases, the National Institutes of Health (NIH), $396,371, February 15, 2016 – January 31, 2018. This is a joint grant with Scott Emrich (PI) and Maria Sharakhova at Virginia Polytechnic Institute and State University.

16. "From Cells to Societies: Mechanisms by Which Microbial Parasites Control Host Phenotypes," NIH Grant R01 GM116927-01, the National Institute of General Medical Sciences (NIGMS), the National Institutes of Health (NIH), $1,776,000, February 1, 2016 – January 31, 2021. This is a joint grant with David P. Hughes (LPI), Ephraim Hanks, Francesco Costanzo, and Tony J. Huang at Penn State University.

17. "(PQD-3) Spatiotemporal Molecular Interrogation of Early Metastatic Evolution *In Situ*," NIH Grant R01CA194697, the National Cancer Institute (NCI), the National Institutes of Health (NIH), $1,390,800, June 1, 2015 – May 31, 2019. This is a joint grant with Siyuan Zhang (LPI), Jun Li, and Fang Liu.

18. "Multiscale Modeling and Empirical Study of a Mechanism Limiting Blood Clot Growth," NIH Grant 1U01-HL116330-01, the National Institutes of Health (NIH), $3,513,606, July 25, 2014 – June 30, 2019. This is a joint grant with Mark Alber (PI), Holly Goodson, Oleg Kim, and Zhiliang Xu.

19. "Development of Quantitative Intravital Imaging Methods for the Assessment of Radiation- and Drug-induced Bone Marrow Toxicity in Pre-clinical Models," the Indiana Clinical and Translational Sciences Institute (ICTSI) under NIH/NCRR Grant UL1TR001108, $20,000, July 1, 2014 – June 30, 2016. This is a joint grant with Nadia Carlesso, Indiana University School of Medicine.

20. "AF: Small: Applied and Theoretical Algorithm Problems in Computational Geometry" (plus a supplemental grant), the National Science Foundation (NSF), Grant CCF-1217906, $460,000, September 1, 2012 – February 28, 2017.

21. "Combined Multiscale Modeling and Experimental Study of Bacterial Swarming," NIH Grant 1R01-GM095959, the National Institutes of Health (NIH), $1,139,164, April 1, 2012 – December 31, 2016. This is a joint grant with Mark Alber (PI), Joshua Shrout, and Zhiliang Xu.

22. "Algorithm-Architecture Codesign for Exascale Computing," Sandia National Laboratories, Department of Energy, $442,587, April 19, 2012 – April 30, 2015 (with Xiaobo S. Hu (PI) and Michael T. Niemier).

23. "Study of the Interplay of Motility Mechanisms during Swarming of *Myxococcus xanthus*," NIH Grant 1R01-GM100470, the National Institute of General Medical Sciences (NIGMS), the National Institutes of Health (NIH), $769,609, September 15, 2011 – May 31, 2014. This is a joint grant with Mark Alber (PI), Joshua Shrout, and Zhiliang Xu.

24. "Multiscale Biomedical Imaging for Autoimmune Disease," the National Academies Keck Futures Initiatives (NAKFI), which is a program of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine, $50,000, May 1, 2011 – April 30, 2013. This is a joint grant with John MacKenzie (PI) and Rageshree Ramachandran at University of California, San Francisco and Frank Chuang at University of California, Davis.

25. "Codesign for Exascale Computing," Sandia National Laboratories, Department of Energy, $75,000, March 15, 2011 – September 30, 2011 (with Xiaobo S. Hu (PI) and Michael T. Niemier).

26. "AF: Small: Algorithmic Problems in Applied Computational Geometry," the National Science Foundation, Grant CCF-0916606, $439,999, July 15, 2009 – June 30, 2012.

27. "Developing Algorithms and Software for a New Radiosurgery Approach to Breast Cancer Treatment," Faculty Research Program, University of Notre Dame, $10,000, January 31, 2009 – December 31, 2009.

28. "Developing New Algorithms and Software for a Radiosurgery Cancer Treatment Problem," Xcision Medical Systems, $36,814, April 1, 2008 – February 28, 2009 (a subcontract of NIH Grant R44-CA132354).

29. "Four-dimensional IMAT Planning Using Graph Algorithms," NIH Grant R01-CA117997-01A2, the National Cancer Institute (NCI), the National Institutes of Health (NIH), $1,239,953, June 1, 2007 – April 30, 2011. This is a joint grant with Cedric Yu (PI) at University of Maryland School of Medicine and Shuang Luan at University of New Mexico.

30. "Development of an FPGA Based System for Accelerating Radiation Dose Calculation," Prowess, Inc., Chico, California, $85,567, November 1, 2006 – February 28, 2008 (with Xiaobo S. Hu (PI)).

31. "REU Supplement to Grant CCF-0515203: Computational Geometry Algorithms for Medical Problems in Radiation Therapy and Medical Imaging," the National Science Foundation, Grant CCF-0515203-02, $6,000, June 1, 2006 – May 31, 2007.

32. "Graph-Based Medical Image Segmentation in 3D and 4D," NIH NIBIB Grant R01-EB004640-01A2, the National Institute of Biomedical Imaging and Bioengineering, the National Institutes of Health (NIH), $1,071,540, April 1, 2006 – January 31, 2009. This is a joint grant with Milan Sonka (PI), Xiaodong Wu, and Andreas Wahle at University of Iowa.

33. "Computational Geometry Algorithms for Medical Problems in Radiation Therapy and Medical Imaging," the National Science Foundation, Grant CCF-0515203, $276,949, June 1, 2005 – May 31, 2008.

34. "Algorithmic, Automata and Complexity in Quantum Computing," The Shanghai Key Laboratory of Intelligent Information Processing, Fudan University, Shanghai, China. Yuan 20,000 (Yuan is the dollar unit of the Chinese currency RBM; 1 Yuan is for about $0.12), January 1, 2005 – December 31, 2006.

35. "New Algorithms and Software Systems for Radiotherapy and Radiosurgery," Faculty Research Program, University of Notre Dame, $10,000, April 1, 2004 – March 31, 2005.

36. "System-Level Approaches to Reducing Energy Consumption in Real-Time Embedded System Design," the National Science Foundation, Grant CCR-0208992, $119,973, September 1, 2002 – August 31, 2004 (with Xiaobo S. Hu (PI) and Joerg Henkel).

37. "Autonomous Network Systems," Lockheed Martin Corporation, $50,000, April 1, 2002 – March 31, 2003 (co-PI: Panos Antsaklis).

38. "Instrumentation for Multidimensional Imaging and Applications," the National Science Foundation, Grant EIA01-30839, $166,007, October 1, 2001 – September 30, 2003 (with Patrick J. Flynn (PI), Kevin W, Bowyer, and Robert L. Stevenson).

39. "Advanced Spinal Instrumentation," the 21st Century Research and Technology Fund, the State of Indiana, $1,998,987, March 1, 2001 – February 28, 2003 (with James J. Mason (PI), Steven R. Schmid, Davide A. Hill, and John E. Renaud).

40. "e-Systems: Algorithms and Architectures," Lockheed Martin Corporation, $50,000, March 1, 2001 – February 28, 2002 (with Panos Antsaklis).

41. "Geometric Problems in Radiosurgery, Radiation Therapy, and Other Medical Applications," the National Science Foundation, Grant CCR-9988468, $263,589, May 1, 2000 – April 30, 2003 (co-PI: Xiaobo S. Hu).

42. "Advanced Routing Concepts," Lockheed Martin Corporation, $25,000, May 1999 – June 2000.

43. "Advanced Routing Technology," Lockheed Martin Corporation, $25,000, January 1999 – December 1999.

44. The NSF Faculty Early Career Development (CAREER) Award, "Theoretical and Practical Solutions for Geometric Path Planning and Related Problems," the National Science Foundation, Grant CCR-9623585, $200,000, 1996 – 2000.

45. "Pursuing a Petaflop: Point Designs for 100 TF Computers Using PIM Technologies," the National Science Foundation, Grant NSF-ASC96-12028, $100,000, 1996 – 1997 (with Peter M. Kogge (PI), Steven C. Bass, Jay B. Brockman, and Edwin H.-M. Sha).

46. "High Speed Image Retrieval Techniques," NEC Research Institute, Inc., $30,000, 1996 – 1997 (with Peter M. Kogge (PI)).

47. The Clark Equipment Assistant Professorship of the Department of Computer Science and Engineering, University of Notre Dame, $42,250, 1994 – 1995.

Patents and Technology Licensing

1. S. Luan, Danny Z. Chen, X.S. Hu, C. Wang, X. Wu, and C.X. Yu, "Segmentation Algorithmic Approach to Step-and-Shoot Intensity Modulated Radiation Therapy," US utility patent 7,283,611, October 16, 2007.

2. S. Luan, Danny Z. Chen, X.S. Hu, C. Wang, X. Wu, and C.X. Yu, "Error Control Algorithmic Approach to Step-and-Shoot Intensity Modulated Radiation Therapy," US utility patent 7,466,797, December 16, 2008.

3. K. Li, X. Wu, Danny Z. Chen, and M. Sonka, "System and Methods for Image Segmentation in N-dimensional Space," US utility patent 7,995,810, August 9, 2011. Licensed to Medical Imaging Applications LLC (MIA), Coralville, Iowa, VIDA Diagnostics, Iowa, and IDx, Iowa.

4. C.X. Yu, S. Luan, Danny Z. Chen, M.A. Earl, and C. Wang, "Single-Arc Dose Painting for Precision Radiation Therapy," US utility patent 8,014,494, September 6, 2011. US Patent Reissue, number Re46,953, July 17, 2018. Licensed to Varian Medical Systems, Inc., Palo Alto, CA.

5. X.S. Hu, C.X. Yu, B. Zhou, Danny Z. Chen, and K.M. Whitton, "Methods and Apparatus for Hardware Based Dose Calculation," US utility patent 8,494,115, July 23, 2013. Licensed to Prowess, Inc., Chico, California.

6. Danny Z. Chen, J. Wang, J.D. MacKenzie, and R. Ramachandran, "Identification of Inflammation in Tissue Images," US utility patent 10,121,245 B2, November 6, 2018.

7. Danny Z. Chen, Y. Zhang, M. T.-C. Ying, L. Yang, and A.T. Ahuja, "Segmenting Ultrasound Images," US provisional patent application, filed on 12/12/2016, Application Number 62/432,849. US utility patent 10,957,045, March 23, 2021.

8. X.S. Hu, Danny Z. Chen, and X. Chen, "Methods of Operating a Graphics Processing Unit (GPU) to Train a Deep Neural Network Using a GPU Local Memory and Related Articles of Manufacture," US patent application, filed on 3/16/2020, Application Number 16/819,840. US utility patent 11,599,798, March 7, 2023.

9. Danny Z. Chen, S. Zhang, L. Yang, Y. Zhang, and I.H. Guldner, "A Method for Fast and Accurate Removal of Background Noise in 3D Microscopy Images," US provisional patent application, filed on 9/5/2016, Application Number 62/383,556.

10. Danny Z. Chen, S. Zhang, L. Yang, Y. Zhang, and I.H. Guldner, "A New Method for Segmentation of Glial Cells in 3D Microscopy Images," US provisional patent application, filed on 10/10/2016, Application Number 62/406,366.

11. X.S. Hu, Danny Z. Chen, and X. Chen, "System and Method for Memory Management of Deep Neural Network Training," US provisional patent application, filed on 3/18/2019, Application Number 62/819,924.

12. J. Chen, M.P. Viana, S.M. Rafelski, H. Wang, and Danny Z. Chen, "Building Computational Transfer Functions on 3D Light Microscopy Images Using Deep Learning," US provisional patent application, filed on 9/30/2019, Application Number 62/908,316.

13. X.S. Hu, Danny Z. Chen, and X. Chen, "moDNN: Memory Optimal Deep Neural Network Training on Graphics Processing Units," US provisional patent application, filed on 2/18/2020, Application Number 62/978,061.

14. J. Chen, M.P. Viana, S.M. Rafelski, H. Wang, Danny Z. Chen, C. L. Frick, and F. Sluzewski, "Building Computational Transfer Functions on 3D Light Microscopy Images Using Deep Learning," Publication Number WO/2021/067507, Publication Date 8/4/2021, Patent Cooperation Treaty (PCT) application filed on 9/30/2020, Application Number PCT/US2020/053644.

Software Development

1. Danny Z. Chen, S. Luan, and C.X. Yu, SLS: The static leaf sequencing (SLS) software for "step-and-shoot" intensity-modulated radiation therapy (IMRT). This software has been used since 2003 for clinical cancer treatment in the Department of Radiation Oncology, University of Maryland Medical Center, Baltimore, MD and the Helen P. Denit Center for Radiation Therapy, Montgomery General Hospital, Olney, MD.

2. J. Chen, F. Shen, Danny Z. Chen, and P.J. Flynn, "Iris Recognition Based on Human-Interpretable Features," Office of Technology Transfer, University of Notre Dame, August 2, 2016.

   http://ott.nd.edu/software-available-for-license/iris-recognition-based-on-human-intrepretable-features/

3. J. Chen, Danny Z. Chen, and M. Alber, "CMARK: A Matlab Toolbox for Segmentation and Tracking of Cells in Time-lapse Images," Office of Technology Transfer, University of Notre Dame, May 4, 2017.

   http://ott.nd.edu/software-available-for-license/cmark-cell-segmentation-and-tracking/

Journal Editorial Activities

- Associate Editor, Artificial Intelligence in Radiology, a section within Frontiers in Radiology, 2022 — present.
- Editorial Board of *International Journal of Computational Geometry and Applications (IJCGA)*, 2008 — present.
- Editorial Board of *Medicine Advances*, 2022 — present.
- Editorial Board of *Journal of Computer Science and Technology (JCST)*, 2007 — 2010.
- Guest editor of *Discrete & Computational Geometry*, 2022.
- Guest editor of *Journal of Computational Geometry*, 2021.
- Guest editor of *Algorithmica*, 2009.
- Guest editor of the *International Journal of Computational Geometry and Applications*, 2009.

Professional Activities

- Program Committee Member, *the 39th AAAI Conference on Artificial Intelligence (AAAI)*, the Main Technical Track, Philadelphia, Pennsylvania, February 25 – March 4, 2025.
- Advisory Committee Member, the *Second Workshop on Trustworthy Artificial Intelligence for Healthcare (TAI4H)*, held in Conjunction with the *33rd International Joint Conference on Artificial Intelligence (IJCAI)*, Jeju Island, South Korea, August 3-9, 2024.
- Program Committee Member, *the 38th AAAI Conference on Artificial Intelligence (AAAI)*, the Main Technical Track, Vancouver, Canada, February 20-27, 2024.
- Advisory Committee Member, *the 1st Trustworthy Machine Learning for Healthcare Workshop*, held in Conjunction with the *11th International Conference on Learning Representations (ICLR)*, Kigali, Rwanda, May 4-5, 2023.
- Program Committee Member, *the 37th AAAI Conference on Artificial Intelligence (AAAI)*, the Main Technical Track, Washington, DC, USA, February 7-14, 2023.
- Program Committee Member, *the 36th AAAI Conference on Artificial Intelligence (AAAI)*, the Main Technical Track, Victoria, BC, Canada, February 22 – March 1, 2022.
- Program Committee Member, the *24th SIAM Symposium on Algorithm Engineering and Experiments (ALENEX)*, Alexandria, Virginia, USA, January 9-10, 2022.
- Program Committee Co-Chair, the *36th Annual International Symposium on Computational Geometry (SoCG)*, Zurich, Switzerland, June 22-26, 2020.
- Organizer (with Y. Shi and X.S. Hu), the *Workshop on Hardware Aware Learning for Medical Image Computing and Computer Assisted Intervention (HAL-MICCAI)*, in the *22nd International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI)*, Shenzhen, China, October 13-17, 2019.
- Program Committee Member, the *29th Annual International Symposium on Algorithms and Computation (ISAAC)*, Jiaoxi, Yilan County, Taiwan, December 16-19, 2018.
- Program Committee Member, the *15th Workshop on Approximation and Online Algorithms (WAOA)*, Vienna, Austria, September 7-8, 2017.
- Program Committee Member, the *33rd Annual Symposium on Computational Geometry (SoCG)*, Brisbane, Australia, July 4-7, 2017.
- Program Committee Member, the *3rd IEEE International Conference on Smart Computing (SMARTCOMP)*, Hong Kong, May 29-31, 2017.
- Program Committee Member, the *25th Fall Workshop on Computational Geometry (FWCG)*, the State University of New York at Buffalo, NY, October 23-24, 2015.
- Program Committee Member, the *14th Bi-annual International Symposium on Algorithms and Data Structures (WADS)*, Victoria, British Columbia, Canada, August 5-7, 2015.
- Program Committee Member, the *1st International Conference on Applied Algorithms (ICAA)*, Kolkata, India, January 13-15, 2014.
- Program Committee Member, the *13rd Bi-annual International Symposium on Algorithms and Data Structures (WADS)*, London, Ontario, Canada, August 12-14, 2013.

- Program Committee Member, the *28th Annual Symposium on Computational Geometry (SoCG)*, Chapel Hill, North Carolina, June 17-20, 2012.
- Program Committee Member, the *Fifth International Frontiers of Algorithmics Workshop (FAW)*, Jinhua, China, May 28-31, 2011.
- Program Committee Member, the *Eighth Annual Conference on Theory and Applications of Models of Computation (TAMC)*, Tokyo, Japan, May 23-25, 2011.
- Program Committee Member, the *Twenty-First Annual International Symposium on Algorithms and Computation (ISAAC)*, Jeju Island, Korea, December 15-17, 2010.
- Program Committee Co-Chair, the *Fourth International Frontiers of Algorithmics Workshop (FAW)*, Wuhan, China, August 11-13, 2010.
- Steering Committee Chair, the *Third International Frontiers of Algorithmics Workshop (FAW)*, Hefei, Anhui, China, June 20-23, 2009.
- Program Committee Member, the *Third International Frontiers of Algorithmics Workshop (FAW)*, Hefei, Anhui, China, June 20-23, 2009.
- Program Committee Member, the *Fifth International Conference on Algorithmic Aspects in Information and Management (AAIM)*, San Francisco, CA, June 16-18, 2009.
- Program Committee Member, the *Fourteenth Annual International Computing and Combinatorics Conference (COCOON)*, Dalian, China, June 27-29, 2008.
- Steering Committee Member, the *Second International Frontiers of Algorithmics Workshop (FAW)*, Changsha, China, June 19-21, 2008.
- Program Committee Member, the *Eighteenth Annual International Symposium on Algorithms and Computation (ISAAC)*, Sendai, Japan, December 17–19, 2007.
- Program Committee Member, the *Third International Symposium on Visual Computing (ISVC)*, Lake Tahoe, Nevada/California, November 26–28, 2007.
- Program Committee Member, the *10th International Conference on CAD/Graphics (CAD/Graphics)*, Beijing, China, October 15–18, 2007.
- Program Committee Member, the *10th International Workshop on Algorithms and Data Structures (WADS)*, Halifax, Nova Scotia, Canada, August 15–17, 2007.
- Advising Committee Chair, the *International Frontiers of Algorithmics Workshop (FAW)*, Lanzhou, China, August 1–5, 2007.
- Steering Committee Member, the *International Conference on Algorithmic Aspects in Information and Management (AAIM)*, 2006 — present.
- Program Committee Co-Chair, the *Twelfth Annual International Computing and Combinatorics Conference (COCOON)*, Taipei, Taiwan, August 15–18, 2006.
- Program Committee Member, the *Ninth International Conference on Computer-Aided Design and Computer Graphics (CAD/CG)*, Hong Kong, Dec. 7–10, 2005.
- Program Committee Member, the *18th International Conference on Parallel and Distributed Computing Systems (PDCS)*, Las Vegas, Nevada, September 12–14, 2005.

- Program Committee Member, the *First International Conference on Algorithmic Applications in Management (AAIM)*, Xi'an, China, June 22–24, 2005.
- Program Committee Member, the *10th Annual International Computing and Combinatorics Conference (COCOON)*, Jeju Island, Korea, August 17–20, 2004.
- Program Committee Member, the *First Workshop on Approximation and Online Algorithms (WAOA)*, co-located with the *Eleventh Annual European Symposium on Algorithms (ESA)*, Budapest, Hungary, September 15–20, 2003.
- Program Committee Member, the *Fourteen Annual International Symposium on Algorithms and Computation (ISAAC)*, Kyoto, Japan, December 15–17, 2003.
- One of the two organizers of the *DIMACS Workshop on Medical Applications in Computational Geometry* (sponsored by NSF), Rutgers University, Piscataway, New Jersey, April 2–4, 2003.
- Program Committee Member, *Workshop on Algorithms and Computational Molecular Biology*, the *International Computer Symposium (ICS)*, Taiwan, December 18–21, 2002.
- Program Committee Member, the *Seventh Annual International Computing and Combinatorics Conference (COCOON)*, Guiling, China, August 20–22, 2001.
- Program Committee Member, *Workshop on Algorithms and Theory of Computation*, the *International Computer Symposium (ICS)*, Taiwan, December 6–8, 2000.
- Program Committee Member, the *Thirteenth International Conference on Parallel and Distributed Computing Systems (PDCS)*, Las Vegas, Nevada, August 8–10, 2000.
- Video Committee Member, the *Eighth Annual Video Review of Computational Geometry*, presented at the *Fifteenth Annual ACM Symposium on Computational Geometry (SCG)*, Miami Beach, Florida, June 13–16, 1999.
- Program Committee Member, the *Thirteenth IEEE International Parallel Processing Symposium & 10th IEEE Symposium on Parallel and Distributed Processing (IPPS/SPDP)*, San Juan, Puerto Rico, April 12–16, 1999.
- Program Committee Member, the *Seventh IEEE Symposium on the Frontiers of Massively Parallel Computation (Frontiers)*, Annapolis, Maryland, February 21–25, 1999.
- Panelist, on review panels of the Numeric, Symbolic, and Geometric Computation (NSGC) Program, May 1997 and December 1997, the Theory of Computing (TOC) Program, March 2005 and May 2007, the Algorithmic Foundations (AF) Program, March 2010, and the Information & Intelligent Systems Division (IIS), June 2016, in the Directorate for Computer and Information Science and Engineering (CISE), the National Science Foundation (NSF).
- Publicity Co-Chair, the *Seventh Annual International Symposium on Algorithms and Computation (ISAAC)*, Osaka, Japan, December 16–18, 1996.
- Program Committee Member, the *Sixth IEEE Symposium on the Frontiers of Massively Parallel Computation (Frontiers)*, Annapolis, Maryland, October 27–31, 1996.
- Invited Member, the Computational Geometry Working Group at the *ACM Workshop on Strategic Directions in Computing Research*, MIT Laboratory for Computer Science, Cambridge, MA, June 14–15, 1996.

- Program Committee Member, the *10th IEEE International Parallel Processing Symposium (IPPS)*, Honolulu, Hawaii, April 15–19, 1996.
- Program Committee Member, the *First Annual International Computing and Combinatorics Conference (COCOON)*, Xi'an, China, August 24–26, 1995.
- Organizer, *Midwest Theory Day*, Notre Dame, Indiana, April 3, 1993.
  - This is a one-day mini-conference in theoretical computer science for researchers and students in the Midwest area. Seven papers were presented, including two invited papers. Over 65 participants attended from 15 institutions in Illinois, Indiana, Michigan, Ohio, and Wisconsin, and two invited speakers attended from Rhode Island and Ontario.

University Service

- Awards Committee, 2023 — present, Department of Computer Science and Engineering, Notre Dame.
- Graduate Admission Committee, 2024 — present, Department of Computer Science and Engineering, Notre Dame.
- Graduate Study Committee, 2019 — 2023, Department of Computer Science and Engineering, Notre Dame.
- Faculty Search Committee, 2020 — 2023, Department of Computer Science and Engineering, Notre Dame.

Plenary Talks

- *2019 International Workshop on Hardware Aware Learning for Medical Imaging and Computer Assisted Intervention (HAL-MICCAI)*, held in conjunction with *MICCAI 2019*, Shenzhen, China, October 13-17, 2019. Title: "Deep Learning and Medical Image Applications: Current Challenges and New Approaches."
- *Artificial Intelligence in Medicine (AIMed) Asia 2018 Conference*, Hangzhou, China, November 7-10, 2018. Title: "Intelligent Computing for Medical Imaging and Disease Analysis."
- The *20th Zhejiang International Smart Healthcare Innovation Conference, Hangzhou, Zhejiang, China*, June 12, 2018. Title: "Intelligent Medicine, Healthcare, and Big Data."
- The *2015 International Conference on Orange Technologies (ICOT)*, Hong Kong, December 19-22, 2015. Title: "Computational Medicine: When Computer Science Meets Modern Health Care."
- The *6th Annual Meeting of the Asian Association for Algorithms and Computation (AAAC)*, Matsushima, Japan, April 19-21, 2013. Title: "A Survey of Algorithmic Problems and Solutions in Medical Informatics."
- The *9th National Conference on Mathematical Programming of China*, Hangzhou, China, April 20-24, 2012. Title: "Computational Geometry: Fundamental Problems, Algorithms, and New Developments."
- The *1st International Frontiers of Algorithmics Workshop (FAW)*, Lanzhou, China, August 1-5, 2007. Title: "Algorithmic Issues in Computer-Assisted Radiation Cancer Treatment."

Service to Governments

- Served on National Science Foundation (NSF) review panels of the Numeric, Symbolic, and Geometric Computation (NSGC) Program, May 1997 and December 1997, the Theory of Computing (TOC) Program, March 2005 and May 2007, the Algorithmic Foundations (AF) Program, March 2010, and the Information & Intelligent Systems Division (IIS), June 2016, in the Directorate for Computer and Information Science and Engineering (CISE). The Engineering of Biomedical Systems (EBMS) Program, October 2021, in the Engineering Biology and Health (EBH) Cluster.
- Served on the Emerging Imaging Technologies and Applications Study Section, Surgical Sciences, Biomedical Imaging and Bioengineering Integrated Review Group, National Institutes of Health (NIH), June 23–24, 2022.
- Reviewed proposals for the National Science Foundation.
- Reviewed proposals for the Natural Sciences and Engineering Research Council (NSERC) of Canada.
- Reviewed proposals for the United States-Israel Binational Science Foundation (BSF), Jerusalem, Israel.
- Reviewed proposals for the Research Grants Council (RGC) of the Hong Kong government.

Media Coverage of Research Work

1. "Single-arc IMRT: Variations on a Theme," MedicalPhysicsWeb, November 25, 2008, Institute of Physics Publishing.

   http://medicalphysicsweb.org/cws/article/research/36809,

2. "Researchers Chip away at Smale's 7th Unsolved Problem in Mathematics," feature article online, Phys.org, a science and technology news website, July 15, 2016.

   http://phys.org/news/2016-07-chip-smale-7th-unsolved-problem.html

3. "Update on Smale's 7th problem," "Math in the Media" of American Mathematical Society, September 2016.

   http://www.ams.org/news/math-in-the-media/math-in-the-media#two

4. "Notre Dame Researchers Develop Software for Potential Use by Law Enforcement," online, *Notre Dame Research*, University of Notre Dame, October 26, 2016.

   https://research.nd.edu/news/developing-biometric-identification-for-the-eye/

5. "Researchers Develop Iris-recognition Software," front page, *The Observer*, the newspaper of University of Notre Dame and Saint Mary's College, November 11, 2016.

   http://ndsmcobserver.com/2016/11/print-edition-friday-november-11-2016/

6. "Notre Dame Researchers Develop Iris Recognition Software using New Method," online, *Biometric Update*, November 16, 2016.

   https://www.biometricupdate.com/201611/notre-dame-researchers-develop-iris-recognition-software-using-new-method

7. "Zombie Ant' Brains Left Intact by Fungal Parasite," *Penn State News*, November 7, 2017.
http://news.psu.edu/story/492948/2017/11/07/research/zombie-ant-brains-left-intact-fungal-parasite

8. "Zombie Ants Are Scarier Than You Ever Imagined," *Fox News*, November 14, 2017.
http://www.foxnews.com/science/2017/11/14/zombie-fungus-is-scarier-than-ever-imagined.html

9. "Zombie Fungus Is Even Scarier Than We Thought," *The New York Post*, November 13, 2017.
http://nypost.com/2017/11/13/zombie-fungus-is-even-scarier-than-we-thought/

10. "See What's Controlling These Zombie Ants," *National Geographic*, November 10, 2017.
https://news.nationalgeographic.com/2017/11/controlling-zombie-ants-fungus-spd/

11. "What Makes Zombie Ants Obey," *EarthSky*, November 9, 2017.
http://earthsky.org/earth/research-zombie-ant-fungus-doesnt-invade-ants-brains

12. "The Fungus That Turns Ants Into Zombies Is More Diabolical Than We Realized," *Gizmodo*, November 9, 2017.
https://gizmodo.com/the-fungus-that-turns-ants-into-zombies-is-more-diaboli-1820301538

13. "Puppeteer Parasite That Creates Zombie Ants Hijacks Their Bodies-Not Brains," *Newsweek*, November 10, 2017.
http://www.newsweek.com/parasite-zombie-ants-hijacks-bodies-not-brains-707816

14. "Biological Clock Found in Fungal Parasite Sheds More Light on 'Zombie Ants' Phenomenon," *Phys.org*, November 6, 2017.
https://phys.org/news/2017-11-biological-clock-fungal-parasite-zombie.html

15. "Scientists Were All Wrong About That Zombie Ant Fungus on 'Planet Earth'," *Inverse*, November 9, 2017.
https://www.inverse.com/article/38278-zombie-cordyceps-fungus-ant-brains

16. " 'Zombie Ant' Fungus Found to Leave Its Victim's Brains Uneaten," *New Atlas*, November 10, 2017.
https://newatlas.com/zombie-ant-fungus-brain/52143/

17. "This Nightmare Fungus Turns Ants into Zombies and Controls Their Every Movement," *Techly*, Australia, November 13, 2017.
https://www.techly.com.au/2017/11/14/nightmare-fungus-turns-ants-zombies-controls-every-movement/

18. "Scientists Discover 'Zombie Fungus' Which Controls Ants' Behaviour, Infects Brain," *Deccan Chronicle*, November 13, 2017.
http://www.deccanchronicle.com/lifestyle/pets-and-environment/131117/scientists-discover-zombie-fungus-which-controls-ants-behaviour-infects-brain.html

19. "How the Zombie Fungus Takes Over Ants' Bodies to Control Their Minds," *The Atlantic*, November 14, 2017.
https://www.theatlantic.com/science/archive/2017/11/how-the-zombie-fungus-takes-over-ants-bodies-to-control-their-minds/545864/

20. "This Fungus Turns Ants into Zombies!", *India Today*, India, November 15, 2017.

    http://indiatoday.intoday.in/education/story/zombie-ants/1/1090111.html

21. "OMG! This Fungus Turns Ants into 'Zombies' and Its More Terrifying Than You Thought," *India TV*, India, November 16, 2017.

    http://www.indiatvnews.com/buzz/news-it-s-true-there-s-a-fungus-which-turns-ants-into-zombies-and-its-more-terrifying-that-you-thought-412280

22. "Close Collaboration Sheds Light on Collective Behaviors," Press Release, College of Engineering, University of Notre Dame, November 21, 2017.

    https://engineering.nd.edu/news-publications/pressreleases/close-collaboration-sheds-light-on-collective-behaviors

23. "Cancer cells mediate immune suppression in the brain," Notre Dame News, University of Notre Dame, October 27, 2020.

    https://news.nd.edu/news/cancer-cells-mediate-immune-suppression-in-the-brain/

24. "Cancer Cells Mediate Immune Suppression in the Brain," News, the Mike and Josie Harper Cancer Research Institute, University of Notre Dame, February 2, 2021.

    https://harpercancer.nd.edu/news-events/news/cancer-cells-mediate-immune-suppression-in-the-brain/

Advanced Research Experience

- Invited lecturer to the Center for Applied Science and Engineering and Institute of Information Science, Academia Sinica, Nankang, Taiwan, June 21 – July 17, 1996. Conducting research in computational geometry and parallel computation with several world leading experts in these fields and with researchers at the Academia Sinica.

- Invited to visit the Max-Planck-Institut (MPI) fur Informatik in Saarbrucken, Germany, June 1 – July 31, 1994. Conducting research in computational geometry and parallel computation with leading researchers at the MPI.

- Accepted for participation in the Course on Computational Geometry and Its Applications, Leonardo Fibonacci Institute, Trento, Italy, June 15–19, 1992, and selected for the Research Experience at the Institute, June 15 – July 10, 1992.

  - This was a seminar course on the state of the art in Computational Geometry offered by the Leonardo Fibonacci Institute, a division of the Istituto Per La Ricerca Scientifica E Tecnologica, Trento, Italy, June 15–19, 1992. About thirty participants were selected from applicants worldwide, and five participants were chosen to stay for one month in the Fibonacci Institute to conduct research with several experts in Computational Geometry.