

CURRICULUM VITA

Jeffrey J. P. Tsai

*Department of Bioinformatics and Medical Engineering
Asia University, Taiwan*

Education:

Ph.D. in Computer Science, Northwestern University, September 1985.

Research and Teaching Interests:

Bioinformatics, Artificial Intelligence, Intelligent Agent Systems, Knowledge-Based Software Engineering, Computer Security, Computer-aided Verification, Software Architecture, Distributed Real-Time Systems.

Professional Experience:

- President, Asia University, Taiwan, 2010-present.
- Chair Professor, Department of Bioinformatics and Medical Engineering, Asia University, Taiwan, 2010 - present.
- Professor, Department of Computer Science, University of Illinois, Chicago, 2001 - 2010.
- Professor, Department of Electrical Engineering and Computer Science, University of Illinois, Chicago, 1997 - 2001.
- Director, Distributed Real-Time Intelligent Systems Laboratory, Department of Computer Science, University of Illinois, Chicago, 1991 - 2010.
- Visiting Professor, Stanford University, 2010.
- Visiting Scholar, University of California at Berkeley, 2010.
- Senior Research Fellow, IC², University of Texas at Austin, 2005 - 2019.
- Chair Professor, National Chiao-Tung University, Taiwan, 2004.
- Chair Professor, China Medical University, Taiwan, 2009-2010.
- President, Taichung Healthcare and Management University, 2001-2003.
- Adjunct Professor, Department of Community Health Sciences, School of Public Health and Tropical Medicine, Tulane University, 2004 - 2009.
- Adjunct Professor, Department of Bioengineering, University of Illinois, Chicago, 2003 - 2004.

- Associate Professor, Department of Electrical Engineering and Computer Science, University of Illinois, Chicago, 1991 - 1997.
- Visiting Computer Scientist, U.S. Air Forces Rome Research Laboratory, New York, 1994- 1995.
- Member, Board of Director, Mid-America Chinese Science and Technology Association, 1991-1995.
- Vice-President, Mid-America Chinese Science and Technology Association, 1993- 1994.
- Assistant Professor, Department of Electrical Engineering and Computer Science, University of Illinois, Chicago, 1985 - 1991.
- Research Assistant, Northwestern University, 1982 - 1985.

Industrial Experience:

- System Engineer, Digital Equipment Corp., 1981 - 1982.
- System Analyst, Honeywell Information Systems, 1980 - 1981.

Honors and Awards:

- Honorary Member, The Phi Tau Phi Scholastic Honor Society of the ROC, 2020.
- Top 10 Outstanding Presidents Award, Association of Private Universities and Colleges, Taiwan, 2019.
- Distinguished Leadership Award, National Chiao Tung University, Taiwan, 2018.
- Distinguished Fellow, International Engineering and Technology Institute, 2018.
- The IETI Annual Scientific Award, International Engineering and Technology Institute, 2018.
- Keynote Speaker, “AI in Precision Medicine,” Taiwan Healthcare Expo, Taiwan, Dec. 8, 2017.
- Keynote Speaker, “Taiwan Higher Education in the Context of Globalization,” The 13th QS Asia Pacific Professional Leaders in Education Conference and Exhibition, Asia University, Taiwan, Nov. 22-24, 2017.
- Keynote Speaker, “Taiwan Higher Education in the Context of Globalization,” Asia University Higher Education Forum, Asia University, Taiwan, Mar. 22, 2017.

- Keynote Speaker, “Taiwan Higher Education in the Context of Globalization,” Internationalization Higher Education Seminar, Esa Unggul University, Indonesia, Oct. 5, 2016.
- Best Paper Award, The IEEE Communications Society of Communications Quality and Reliability Workshop, 2016.
- Outstanding Alumnus Award, National Chiao Tung University, Taiwan, 2015.
- Keynote Speaker, “Experiences in Developing a New University,” 2015 MUST President Forum, University of Macau, Nov. 4, 2015.
- Distinguished Speaker, “Great Success of Asia University,” The ATLAS Biennial Conference on Transdisciplinary- Transnational -Transcultural, June 6-9, 2012.
- Founding Fellow, The International Institute of Cognitive Informatics and Cognitive Computing (ICIC), April 2012.
- The ATLAS Transdisciplinary Distinguished Achievement Award, The Academy of Transdisciplinary Learning & Advanced Studies, 2010.
- Founding Fellow, International Transdisciplinary Scientists’ Village, 2010.
- Keynote Speaker, “A New Frontier: Cyber Physical Systems,” The 2009 Joint Conference on Pervasive Computing, December 3-5, 2009, Taipei, Taiwan, 2009.
- Keynote Speaker, “A New Frontier: Software Engineering for Cyber Physical Systems,” The 11th SDPS Transdisciplinary Conference on Integrated Design and Process Science, June 1-6, Taichung, Taiwan, 2008.
- Keynote Speaker, "Opportunities and Challenges of Sensor Networks Computing," National Computer Symposium, Taiwan, Dec. 20-21, 2007.
- Distinguished Speaker, “Challenges and Opportunities of Ubiquitous Computing Paradigm,” Forum on Future Computing – Transparent Computing and Active Services, Tsinghua University, Beijing, June 23-25, 2007.
- Distinguished Speaker, "Transdisciplinary Research and Education in Health Science, Management, and Information Technology," The 9th Conference on Integrated Design and Process Technology, San Diego, CA, June 25-28, 2006.
- Keynote Speaker, “Intrusion Detection for Sensor Networks,” The 19th IEEE Advanced Information Networking and Application Conference, Taipei, March 29-30, 2005.
- Keynote Speaker, “Attacks and Countermeasures in Software System Security,”

IEEE International Symposium on E-Commerce for Dynamic E-Business, Beijing, Sept. 2004.

- Keynote Speaker, "Applications of A.I. Research in Bioinformatics," World Congress on Integrated Design and Process Science, Austin, Texas, Dec. 2003.
- Keynote Speaker, "Transdisciplinary Research and Education in Healthcare, Management, and Information Technology," Conf. on Sun Yat-sen Philosophy and Modern Society: Managerial Science's Practice and Application, Dec. 2002.
- Keynote Speaker, "New Areas of Applied Artificial Intelligent Research," The 14th IEEE International Conf. on Tools with Artificial Intelligence, Washington D.C., Nov. 2002.
- Distinguished Speaker, "Transdisciplinary Research and Education in Healthcare, Management, and Information Technology," National Chung Cheng University, Oct. 2002.
- Keynote Speaker, "Model and Heuristic Technique for Efficient Verification of Component-Based Software Systems," The 1st IEEE International Conference on Cognitive Informatics, Calgary, Alberta, Canada, August 19-20, 2002.
- Keynote Speaker, "Compositional Modeling and Verification of Software systems," Object-Oriented Software Technology and Applications Workshop, Oct. 2001.
- Distinguished Speaker in Software Engineering, "Compositional Approach for Modeling and Verification of Software Systems," Southern Methodist University, March 2001.
- Faculty Research Award, College of Engineering, University of Illinois at Chicago, 2001.
- Keynote Speaker, "Engineering of Agent-Based Systems," International Computer Symposium, Taiwan, Dec. 2000.
- Distinguished Speaker, "Knowledge-Based Software Systems," University of Wollongong, Australia, August 2000.
- Distinguished Speaker, "Specification and Verification of Agent-Based Systems," University of Texas at Dallas, Nov. 1999.
- Keynote Speaker, "Engineering of Intelligent Agent Systems," The 11th IEEE International Conference on Tools with Artificial Intelligence, Chicago, ILL., Nov. 1999.
- Tamkang Chair Distinguished Speaker, "Engineering of Intelligent Systems,"

Tamkang University, Taiwan, May 1999.

- Distinguished Speaker, "Knowledge-Based Software Engineering for Communication Software," Advanced Communication Research Laboratory, Kyoto, Japan, Oct., 1994.
- IEEE TAI Research Achievement Award, for "10 years of innovative and outstanding contribution in the fields, Knowledge based Software Engineering and Design & Automatic Verification of Intelligent Systems," IEEE Computer Society, International Conf. on Tools with Artificial Intelligence, Nov. 1998.
- Fellow, Society for Design and Process Science (SDPS), 1998 for "promoting creativity in design and process science."
- Fellow, American Association for the Advancement of Science (AAAS), 1997, for "pioneering studies in knowledge-based software engineering, particularly for research on the specification, monitoring, testing, and debugging of distributed real-time systems."
- IEEE Technical Achievement Award, IEEE Computer Society, 1997, for "contribution to knowledge-based software engineering."
- Fellow, The Institute of Electrical and Electronics Engineers (IEEE), 1996, for "contributions to knowledge-based software engineering for time-critical systems."
- University Scholar Faculty Excellence Award, University of Illinois Foundation, 1994, for "distinction as a member of the faculty of the University of Illinois."
- IEEE Distinguished Speaker, IEEE Computer Society, 1993-1996.
- Engineering Foundation Research Award, U.S. Engineering Foundation Society, 1988.
- NSF Research Initiation Award, U.S. National Science Foundation, 1988.

Service Awards:

- Certificate of Appreciation, for serving as the General Co-Chair of the 9th IEEE International Conference on Bioinformatics and Bioengineering, Taiwan, June 22-24, 2009.
- Certificate of Appreciation, for serving as the General Co-Chair of the 2nd IEEE International Conference on Sensor Network, Ubiquitous, and Trustworthy Computing (SUTC2008), June 11-13, 2008.
- Certificate of Appreciation, for serving as the General Co-Chair of the 9th IEEE

International Symposium on Multimedia, IEEE Computer Society, December 2007.

- Certificate of Appreciation, for serving as the General Co-Chair of the 16th IEEE International Symposium on Software Reliability Engineering, IEEE Computer Society, November 2005.
- Certificate of Appreciation, for serving as the General Co-Chair of the 7th IEEE International Symposium on Multimedia, IEEE Computer Society, December 2005.
- Certificate of Appreciation, for serving as the General Co-Chair of the 4th IEEE International Conference on Cognitive Informatics, IEEE Computer Society, August 2005.
- Certificate of Appreciation, IEEE Computer Society, 1999 for "thoughtful and conscientious evaluation of Fellow candidates during service on the 1999 Fellows Evaluation Committee."
- Certificate of Appreciation, IEEE Computer Society, 1998 for "thoughtful and conscientious evaluation of Fellow candidates during service on the 1998 Fellows Evaluation Committee."
- SDPS Service Award, Society for Design and Process Science, 1996.
- IEEE Meritorious Service Award, IEEE Computer Society, 1994.
- IEEE Distinguished Visitor, IEEE Computer Society, 1993-1996.
- Certificate of Appreciation, IEEE Computer Society, 1991.
- Certificate of Recognition, John Nuveen Center for International Affairs, University of Illinois, 1990.
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Biography Listings:

- Listed in Who's Who in Engineering Education, 2002.
- Listed in Marquis Who's Who in America, 2000-2001.
- Listed in Marquis Who's Who in Science and Engineering, 2000-2001.
- Listed in Marquis Who's Who in the World, 2000.

National and International Committee Activities:

- Member, Task Force on Autonomic and Trusted Computing (TFATC) Committee, the Computational Intelligence Society (CIS), IEEE, 2008-present.

- Member, IEEE Fellow Evaluation Committee, IEEE Computer Society, 2007-2010.
- External Reviewer, the University Grants Committee (UGC) of Hong Kong, 2007.
- Chair, Best Paper Award Committee, the 2nd International Conference on Innovations and Real-Time Applications of Distributed Sensor Networks, Washington D.C., October, 16-17, 2006.
- Member, Advanced Technology Advisory Board, Institute for Information Industry, Taiwan, 2006.
- External Reviewer, Science Foundation Ireland, Nov. 2005.
- External Reviewer, Hong Kong Research Grants Council, 1999-2008.
- NSF Panel Member, Career Award Panel, National Science Foundation, Sept. 21-22, 2005.
- NSF Panel Member, Information Technology Research Program, National Science Foundation, May 13-14, 2004.
- Member, Executive Committee of IEEE Technical Committee on Services Computing, 2003 - present.
- NSF Panel Member, SBIR, National Science Foundation, Sept. 2000.
- NSF Panel Member, Research Equipment Grant, National Science Foundation, June 2000.
- Chair, IEEE Technical Committee on Multimedia Computing, 2000-2003.
- Member, IEEE Fellow Evaluation Committee, IEEE Computer Society, 1997 - 2000.
- Member, IEEE Technical Achievement Award Committee, IEEE Computer Society, 1998 - 1999.
- External Reviewer, Boyd Professorship, Louisiana State University System, 1998.
- Member, U.S. DoD Defense Advanced Research Project Agency (DARPA) Information Science and Technology (ISAT) Study on Complex Systems, 1996-1997.
- NIH Review Panel Member, Informatics & Human Brain Project, National Institutes of Health, Maryland, April 1996.
- Member, ICDCS'96 Best Paper Award Committee, International Conference on

Distributed Computing Systems, May 1996.

- Member, University Scholars Award Panel, University of Illinois, Chicago, 1995, 1996.
- NSF RIA Award Panel Member, National Science Foundation Research Initiation Award Panel, March 1992.

Publications:

Book Publications:

1. 大學的社會實踐和永續創新：由阿罩霧出發的 SDGs 故事, (*Innovation and Sustainability: Asia University SDGs Stories in Wufeng*) (J. J. P. Tsai and H.C. Ko), China Times Publishing Co, Taiwan, 2021.
2. *Application of Omics, AI and Blockchain in Bioinformatics Research.*, (ed., J. J. P. Tsai and K.L. Ng), World Scientific Inc., 2019.
3. *Computational Methods with Applications in Bioinformatics Analysis* (ed., J. J. P. Tsai, K.L. Ng), World Scientific Inc., 2017.
4. 諾貝爾大師的世界觀, 天下文化, (*The World Views of Nobel Laureates*) (J. J. P. Tsai), Global Views-Commonwealth Publishing Group, Taiwan, 2017.
5. 創新世代 12 個人文思維, 天下文化, (*Humanities in the Age of Innovation: 12 Approaches*), (J. J. P. Tsai), Global Views-Commonwealth Publishing Group, Taiwan, 2016.
6. *Compositional Verification of Concurrent and Real-Time Systems*, (Eric Y.T. Juan and J. J. P. Tsai), Springer/Kluwer, 2012
7. *Intrusion Detection: A Machine Learning Approach*, (J. J. P. Tsai, Z. Yu), Imperial College Press, London, 2011.
8. *Machine Learning in Cyber Trust: Security, Privacy, Reliability*, (ed., J. J. P. Tsai and P. S. Yu), Springer, New York, 2009.
9. *Sensor Networks, Ubiquitous and Trustworthy Computing*, (ed., M. Singhal, G. Serugendo, J. J. P. Tsai, W. Lee, K. Romer, Y. Tseng), IEEE Computer Society Press, 2008.
10. *Advances in Machine Learning Applications in Software Engineering*, (ed., D. Zhang and J. J. P. Tsai), IGI Publishing Inc., PA, 2007.
11. *Ubiquitous Intelligence and Computing*, (ed. J. Ma, H. Jin, L. T. Yang, J. J. P. Tsai), *Lecture Notes in Computer Science*, Springer, New York, 2006.
12. *Security Modeling and Analysis of Mobile Agent Systems*, (L. Ma and J. J. P. Tsai), Imperial College Press, London, 2006.

13. *Machine Learning Applications in Software Engineering*, (ed., D. Zhang and J. J. P. Tsai), World Scientific Inc., 2005.
14. *Compositional Verification of Concurrent and Real-Time Systems*, (E. Juan and J. J. P. Tsai), Springer/Kluwer, 2002.
15. *Hybrid Parallel Execution Model for Logic-Based Specification Languages*, (J. J. P. Tsai and B. Li), World Scientific Pub. Inc. New Jersey, 2001.
16. *Distributed Real-Time Systems*, (J. J. P. Tsai, Y. Bi, S. Yang, and R. Smith), Wiley & Sons Inc., NY, 1996.
17. *Monitoring and Debugging Distributed Real-Time Systems*, (ed., J. J. P. Tsai and S. Yang), IEEE Computer Society Press, Washington D.C., November 1994.
18. *Knowledge-Based Software Development for Real-Time Distributed Systems*, (J. J. P. Tsai and T. Weigert), World Scientific Inc., New Jersey, December 1993.

Book Chapters:

1. "Sharing Semantic a Semantic Computing for Cancer Recommendation in Human Robot Interaction," (Charles C. N. Wang, I-Seng Cheng, Phillip C.Y. Sheu and Jeffrey J. P. Tsai), *Encyclopedia with Semantic Computing and Robotic Intelligence*, World Scientific Inc., New York, 2018.
2. "Sharing Semantic Use of semantics in Medical Informatics," (Charles C. N. Wang, and Jeffrey J. P. Tsai), *Encyclopedia with Semantic Computing and Robotic Intelligence*, World Scientific Inc., New York, 2018.
3. "Sharing Semantic Use of semantics in Bio-Informatics," (Charles C. N. Wang, and Jeffrey J. P. Tsai), *Semantic Computing*, World Scientific Inc., New York, 2018.
4. "Sharing Semantic Analytics of Biomedical Data," (Charles C. N. Wang, Phillip C.Y. Sheu and Jeffrey J. P. Tsai), *Computational Methods with Applications in Bioinformatics Analysis*, World Scientific Inc., New York, 2017.
5. "Sharing Use of semantics in Bio-Informatics," (Charles C. N. Wang, and Jeffrey J. P. Tsai), *Encyclopedia with Semantic Computing and Robotic Intelligence*, World Scientific Inc., New York, 2017.
6. "Sharing Cancer-related Genes Research Resources on Peer-to-Peer Network," (C. C. Wu, R. M. Chen, and Jeffrey J. P. Tsai), *Biomedical Engineering: Health Care Systems, Technology and Techniques*, Springer, New York, 2011.
7. "IHCREAD: An Automatic Immunohistochemistry Image Analysis Tool," (C. Y. Hsu, R. M. Hu, R. M. Chen, J. W. Ou, and Jeffrey J. P. Tsai), *Biomedical Engineering: Health Care Systems, Technology and Techniques*, Springer, New York, 2011.
8. "A Systematic Gene Expression Explorer Tool for Multiple and Paired Chips," (J. W. Ou, R. M. Chen, R. M. Hu, C. Y. Hsu, and Jeffrey J. P. Tsai), *Biomedical*

- Engineering: Health Care Systems, Technology and Techniques*, Springer, New York, 2011.
9. "A Non-Intrusive Approach to Enhance Legacy Embedded Control Systems with Cyber Protection features," (S.P. Ren, K. Kwiat, Jeffrey J. P. Tsai), *Machine Learning in Cyber Trust: Security, Privacy, and Reliability* (ed. Jeffrey J. P. Tsai and P. Yu), Springer-Verlag, New York, 2009.
 10. "Computer System Monitoring," *Encyclopedia of Computer Science and Engineering Engineering*, (A. Liu and Jeffrey J. P. Tsai), John Wiley & Sons Inc., Dec. 2008.
 11. "Knowledge Verification," *Encyclopedia of Computer Science and Engineering*, (Jeffrey J. P. Tsai and D. Zhang), Wiley Interscience, Dec. 2008.
 12. "Intrusion Detection Techniques for Wireless Networks," (C. Kersey, Z. Yu, and Jeffrey J. P. Tsai), *Wireless Ad Hoc Networking: Personal-Area, Local-Area, and Sensory-Area Networks*, Taylor & Francis, 2007.
 13. "Adding Context into Access Control Model for Computer Security Policy," (S. Ren, Jeffrey J. P. Tsai, O. Frieder), *Advances in Machine Learning Application in Software Engineering*, IGI Publishing Inc., 2007.
 14. "Software Monitoring," *Encyclopedia of Computer Science and Engineering*, (A. Liu and Jeffrey J. P. Tsai), Wiley Interscience, 2006.
 15. "Attacks and Countermeasure in Software System Security," (L. Ma and Jeffrey J. P. Tsai), *Handbook of Software Engineering and Knowledge Engineering*, Vol. III, August 2005.
 16. "Formal Verification Techniques for Computer Communication Security Protocol," (L. Ma and Jeffrey J. P. Tsai), *Handbook of Software Engineering and Knowledge Engineering*, Vol. I, January 2002.
 17. "Computer System Monitoring," *Encyclopedia of Electrical and Electronics Engineering*, (A. Liu and Jeffrey J. P. Tsai), John Wiley & Sons Inc., Feb. 1999.
 18. "Knowledge Verification," *Encyclopedia of Electrical and Electronics Engineering*, (Jeffrey J. P. Tsai, E. Juan, A. Sahay, and D. Zhang), John Wiley & Sons Inc., Feb. 1999.
 19. "A Distributed Cooperative Agents Architecture for Software Development," (Jeffrey J. P. Tsai and R. Sheu), *The Next Generation of Information Systems: from Data to Knowledge, Lecture Notes in Artificial Intelligence*, (eds. M. Papazoglou and J. Zelezniakow), Springer-Verlag, Berlin Heidelberg, Vol. 611, pp. 271-290, 1992.
 20. "Development of Expert Systems Shells," (Jeffrey J. P. Tsai, S. J.H. Yang, N. Waheed, T. Moher), *Knowledge Engineering Shells: Systems and Techniques (Advances Series in Artificial Intelligence)*, Vol. 2, (ed. N. Bourbakis), World

Scientific Inc., Dec. 1993.

21. “A Knowledge-Based Approach for the Specification and Analysis of Real-Time Systems,” (Jeffrey J. P. Tsai and H. Jang), *Advances Series in Artificial Intelligence*, Vol. 1, (ed. N. Bourbakis), World Scientific Inc., 1992.

Refereed Journal Publications:

1. “Enhanced Risk of Osteoporotic Fracture in Patients with Sarcopenia: A National Population-Based Study in Taiwan” (Han-Wei Zhang, Zhi-Ren Tsai, Ko-Ta Chen, Sheng-Lun Hsu, Yi-Jie Kuo, Ying-Chin Lin, Shu-Wei Huang, Yu-Pin Chen, Hsiao-Ching Peng, Jeffrey J.P. Tsai, and Chun-Yi Hsu.) *Journal of Personalized Medicine*.; Vol.12 No.5 pp.791-801, May 2022.
2. “Network Subgraph-Based Approach for Analyzing and Comparing Molecular Networks.” (Chien-Hung Huang, Efendi Zaenudin, Jeffrey J.P. Tsai, Nilubon Kurubanjerdjit, Ka-Lok Ng) *PeerJ* Vol.10:e13137, May 2022.
3. “A Clinical Kidney Intelligence Platform Based on Big Data, Artificial Intelligence, and Blockchain Technology” (Zon-Yin Shae and Jeffrey J. P. Tsai) *International Journal on Artificial Intelligence Tools*, Vol. 31, No. 3 pp.2241007-2241012, 2022.
4. “LASSO and Bioinformatics Analysis in the Identification of Key Genes for Prognostic Genes of Gynecologic Cancer.”(Shao-Hua Yu, Jia-Hua Cai, De-Lun Chen, Szu-Han Liao, Yi-Zhen Lin, Yu-Ting Chung, Jeffrey J. P. Tsai and Charles C. N. Wang), *Journal of Personalized Medicine*. 11(11):1177-1189, Nov. 2021.
5. “Construction and Validation of a Prognostic Gene-Based Model for Overall Survival Prediction in Hepatocellular Carcinoma Using an Integrated Statistical and Bioinformatic Approach.”(Eskezeia Yihunie Dessie, Siang-Jyun Tu, Hui-Shan Chiang, Jeffrey J. P. Tsai, Ya-Sian Chang, Jan-Gowth Chang and Ka-Lok Ng), *International Journal of Molecular Science*. 22(4): 1632-1648, 5 Feb. 2021.
6. “Editorial.”(N Bourbakis, Jeffrey J. P. Tsai and N Filipovic), *EAI Endorsed Transactions on Bioengineering and Bioinformatics*. 1, Feb. 2021.
7. “Identification of Most Influential Co-occurring Gene Suites for Gastrointestinal Cancer Using Biomedical Literature Mining and Graph-based Influence Maximization.”(Charles C. N. Wang, Jennifer Jin, Jan-Gowth Chang, Masahiro

Hayakawa, Atsushi Kitazawa, Jeffrey J. P. Tsai, Phillip C.-Y. Sheu), *BMC Medical Informatics Decis. Mak.* 20(1):208-219, 2020.

8. “Dissecting Molecular Network Structures Using a Network Subgraph Approach.” (Chien-Hung Huang, Efendi Zaenudin, Jeffrey J. P. Tsai, Nilubun Kurubanjerdjit, Eskezeia Dessie, Ka-Lok Ng), *PeerJ*, 8:e9556-e9585, Aug. 2020.
9. “Text Mining in Literature Review of Urothelial Cancer Using Topic Model.” (Hsuan-Jen Lin, Phillip C.-Y. Sheu, Jeffrey J. P. Tsai, Che-Yi Chou, and Charles C.N. Wang), *BMC Cancer*, 20(1): 462-468, 2020.
10. “A Patient-Centric Health Information Exchange Framework Using Blockchain Technology” (Yan Zhuang, Lincoln R. Sheets, Yin-Wu Chen, Zon-Yin Shae, Jeffrey J. P. Tsai, and Chi-Ren Shyu), *IEEE Journal of Biomedical and Health Informatics*, 24(8), pp. 2169-2176, 2020.
11. “Identification of Hub Genes Associated with Development of Head and Neck Squamous Cell Carcinoma by Integrated Bioinformatics Analysis” (Chia Ying Li, Jia-Hua Cai, Jeffrey J. P. Tsai, and Charles C.N. Wang), *Frontiers in Oncology*, 10:681-692, 2020.
12. “Robust and Computationally Efficient Digital IIR Filter Synthesis and Stability Analysis under Finite Precision Implementations” (Hsien-Ju Ko and Jeffrey J. P. Tsai), *IEEE Transactions on Signal Processing*, Vol. 68, pp. 1807-1822, 2020.
13. “Usefulness of Therapeutic Hypothermia to Improve Survival in Out-of-Hospital Cardiac Arrest.” (Po-Yen Ko, Ling-Ling Wang, Yi-Jiun Chou, Jeffrey J. P. Tsai, Su-Hua Huang, Chih-Ping Chang, Yi-Tzon Shiao and Jen-Jyh Lin.), *Acta Cardiologica Sinica*, 35(4), pp.394-401, 2019.
14. “Identification of Prognostic Candidate Genes in Breast Cancer by Integrated Bioinformatic Analysis.” (Wang, Charles C.N., Li, Chia Ying, Cai, Jia-Hua, Sheu, Phillip C.-Y., Tsai, Jeffrey J. P., Wu, Meng-Yu, Li, Chia-Jung and Hou, Ming-Feng), *Journal of Clinical Medicine*, 8(8), pp.1160-1173, 2019.
15. “Trust-Based IoT Cloud Participatory Sensing of Air Quality,” (Jia Guo, Ing-Ray Chen, Ding-Chau Wang, Jeffrey J. P. Tsai, Hamid Al-Hamadi), *Wireless Personal Communications*, 105(4), pp. 1461-1474, 2019.

16. "Trust-based Service Management for Mobile Cloud IoT Systems, (Ing-Ray Chen, Jia Guo, Ding-Chau Wang, Jeffrey J. P. Tsai, Hamid Al-Hamadi and Ilsun You), *IEEE Transactions on Network and Service Management*, Vol.16, pp. 246-263, 2019.
17. "CATrust: Context-Aware Trust Management for Service-Oriented Ad Hoc Networks, (Y. Wang, I.R. Chen, J.H. Cho, A. Swami, Y.C. Lu, C.T. Lu, and J. J. P. Tsai), *IEEE Transactions on Services Computing*, Vol. 11, Issue. 6, pp. 908-921, 2018.
18. "Trust-based Mechanism Design for Cooperative Sepctrum Sensing in Cognitive Radio Networks." (Ji Wang, Ing-Ray Chen, Jeffrey J. P. Tsai, and Ding-Chau Wang), *Computer Communications*. vol. 116, pp. 90-100, 2018.
19. "Drug Repurposing and Therapeutic Anti-MicroRNA Predictions in Oxidized Low-Density Lipoprotein-Induced the Proliferation of Vascular Smooth Muscle Cell Associated Diseases" (Shun-Tsung Chen, Chien-Hung Huang, Victor C. Kok, Jin-Shuei Ciou, Jeffrey J. P. Tsai, Nilubon Kurubanjerdjit, Chi-Ying F Huang, and Ka-Lok Ng), *Bioinformatics and Computational Biology*, Vol.15, No. 1, pp. 1-23, 2017.
20. "The Combination of Computational and Biosensing Technologies for Selecting Aptamer Against Prostate Specific Antigen," (Pi-Chou Hsieh, Hui-Ting Lin, Wen-Yih Chen, Jeffrey J. P. Tsai, and Wen-Pin Hu), *BioMed Research International*, Volume 2017.
21. "A Survey of Trust Computation Models for Internet of Things Systems," (J. Guo, I.R. Chen, and J. J. P. Tsai), *Computer Communications*, vol. 97, pp. 1-14, 2017.
22. "Trust-Based Task Assignment with Multi-Objective Optimization in Service-Oriented Ad Hoc Networks," (Y. Wang, I.R. Chen, J.H. Cho, and J. J. P. Tsai), *IEEE Transactions on Network and Service Management*, Vol. 14, pp.217-232, 2017.
23. "Identify Potential Drugs for Cardiovascular Diseases Caused by Stress-induced Genes in Vascular Smooth Muscle Cells" (Chien-Hung Huang, Jin-Shuei Ciou, Shun-Tsung Chen, Victor C. Kok, Yi Chung, Jeffrey J. P. Tsai, Nilubon

Kurubanjerdjit, Chi-Ying F. Huang, Ka-Lok Ng), *PeerJ*, Vol.4:e2478-e2511, 2016.

24. "DNA Methylation-regulated MicroRNA Pathways in Ovarian Serous Cystadenocarcinoma: a Meta-analysis" (David Agustriawan, Chien-Hung Huang, Jim Jinn-Chyuan Sheu, Shan-Chih Lee, Jeffrey J. P. Tsai, Nilubon Kurubanjerdjit, Ka-Lok Ng), *Computational Biology and Chemistry*, Vol. 65, pp.154-164, Dec. 2016.
25. "Finding a Potential Dipeptidyl Peptidase-4 (DPP-4) Inhibitor for Type-2 Diabetes Treatment Based on Molecular Docking, Pharmacophore Generation, and Molecular Dynamics Simulation," (Harika Meduru, Yeng-Tseng Wang, Jeffrey J. P. Tsai and Yu-Ching Chen), *International Journal of Molecular Sciences*, Vol. 17(6): pp. 920-931, Jun. 2016.
26. "KSOS-An Operating System for Knowledge Societies," "(Ke Hao, Phillip C. Y. Shen and Jeffrey J. P. Tsai), *International Journal of Semantic Computing*, Vol. 9, No.4, pp. 483-502, 2015.
27. "Towards Semantic Biomedical Problem Solving," "(Charles C. N. Wang, Phillip C. Y. Shen, Hiroshi Yamaguchi and Jeffrey J. P. Tsai), *International Journal of Semantic Computing*, Vol. 9, No.4, pp. 415-431, 2015.
28. "Transcription Factor and MicroRNA-regulated Network Motifs for Cancer and Signal Transduction Networks," (Wen-Tsong Hsieh, Ke-Rung Tzeng, Jin-Shuei Ciou, Jeffrey J. P. Tsai, Nilubon Kurubanjerdjit, Chien-Hung Huang, Ka-Lok Ng), *BMC Systems Biology*, (Suppl. 1):S5-S16, Dec. 2015.
29. "Using Time-course Data to Identify Stress- and LDL-induced MicroRNA Target Genes for Vascular Smooth Muscle Cells," (Chien-Hung Huang, Jin-Shuei Ciou, Shun-Tsung Chen, Ke-Rung Tzeng, Jeffrey J. P. Tsai, Nilubon Kurubanjerdjit, and Ka-Lok Ng), *Engineering Letters*, Vol. 23, No. 4, pp. 307-311, Nov. 2015.
30. "FARE-CAFE: A Database of Functional and Regulatory Elements of Cancer-associated Fusion Events" (Parveen Kumar Korla, Jack Cheng, Chien-Hung Huang, Jeffrey J. P. Tsai, Yu-Hsuan Liu, Nilubon Kurubanjerdjit, Wen-Tsong Hsieh, Huey-Yi Chen and Ka-Lak Ng), *Batabase*, Vol. 2015, Aug 2015.

31. “Cancer Risk in Patients Aged 30 Years and above with Type 2 Diabetes Receiving Antidiabetic Monotherapy: A Cohort Study Using Metformin as the Comparator” (Yu-Ching Chen, Victor C Kok, Ching-Hsuan Chien, Jorng-Tzong Horng, Jeffrey J. P. Tsai), *Therapeutics and Clinical Risk Management*, Vol. 11:13, pp.1315-1323, Aug 2015.
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Professional Activities:**Journal Editorship Positions:**

- Advisory Board, International Journal of Big Data Intelligence, 2014.
- Honorary Editors-in-Chief , International Journal of Engineering and Industries (IJEI), 2010-2015
- Co-Editor-in-Chief, International Journal of Artificial Intelligence Tools, 1994-present.
- Editor-in-Chief, SDPS Transaction on Integrated Design and Process Science, 2001 - 2006.
- Editor-in-Chief, Book Series in Health Informatics, 2005-2010.
- Editor, Annals of Software Engineering (Kluwer), 2000-2002.
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- Associate Editor, International Journal of Semantic Computing, 2007 - present.
- Associate Editor, Journal of Ubiquitous Computing and Intelligence, 2005 – 2010.
- Editor, International Journal of Cognitive Informatics and Natural Intelligence, 2005 – 2010.
- Editor, Encyclopedia of Computer Science and Engineering, Wiley Interscience,

2002-2009.

- Associate Editor, International Journal of Software Science and Computational Intelligence (IJSSCI), 2009 - 2013.
- Editor, Handbook on Software Engineering and Knowledge Engineering, 1999-2002.
- Editor, Journal of the Chinese Institute of Engineers, 1997 - 2004.
- Guest Co-Editor, ACM Transactions on Autonomous and Adaptive Systems, 2006.
- Guest Co-Editor, International Journal of Software Engineering and Knowledge Engineering, special issue on Software and Knowledge Support in Bioinformatics, April 2005.
- Guest Editor, Annals of Software Engineering, special issue on Multimedia Software Engineering, 2001.
- Guest Co-Editor, International Journal of Software Engineering and Knowledge Engineering, special issue on Multimedia Software Engineering, 1999.
- Guest Editor, Annals of Software Engineering, special issue on Real-Time Software Engineering, 1999.
- Guest Editor, International Journal of Software Engineering and Knowledge Engineering, special issue on High-Assurance Systems, 1999.
- Guest Editor, IEEE Transactions on Knowledge Engineering and Data Engineering, special issue on Dependability of A.I. Systems, Feb. 1995.
- Guest Editor, International Journal on Software Engineering and Knowledge Engineering, special issue on A.I. Techniques for Software Engineering, Dec. 1992.

Honorary Conference/General Chair:

- IEEE International Conference on Artificial Intelligence and Virtual Reality (IEEE AIVR 2021), Taichung, Taiwan, Nov. 15-17, 2021.
- IEEE International Conference on Robotic Computing (IEEE IRC 2021), Taichung, Taiwan, Nov. 15-17, 2021.
- IEEE International Conference on Multimedia Big Data (BigMM 2021), Taichung, Taiwan, Nov. 15-17, 2021.
- The 4th IEEE International Conference on Robotic Computing (IEEE IRC 2020), Taichung, Taiwan, Nov. 9-11, 2020.

- The 9th IEEE International Symposium on Cloud and Service Computing (IEEE SC2), Kaohsiung, Taiwan, Nov. 18-21, 2019.
- The 6th International Conference on Internet of Vehicles (IOV 2019), Kaohsiung, Taiwan, Nov. 18-21, 2019.
- The ATLAS Biennial Conference on Transdisciplinary- Transnational - Transcultural, June 6-9, 2012.
- IEEE Knowledge and Data Engineering Exchange Symposium, Taipei, 1998.

Conference/General Chair (or Co-Chair):

- The 18th annual IEEE International Conference on BioInformatics and BioEngineering, Taichung, Taiwan, Oct. 29-31, 2018.
- The 20th IEEE International Symposium on Multimedia (IEEE ISM 2018), Taichung, Taiwan, Dec. 10-12, 2018.
- The 1st IEEE International Conference on Artificial Intelligence and Virtual Reality (IEEE AIVR 2018), Taichung, Taiwan, Dec. 10-12, 2018.
- The 19th IEEE International Symposium on Multimedia, Taichung, Taiwan, Dec. 11-13, 2017.
- The Challenges and Opportunities for Higher Education in the Age of the Fourth Industrial Revolution, Taichung, Taiwan, Nov. 20-21, 2017.
- The 1st IEEE International Conference on Robotic Computing, Taichung, Taiwan, Apr. 10-12, 2017.
- The 1st IEEE International Conference on Cognitive Computing, Hawaii, USA, Jun. 25-30, 2017.
- The 9th IEEE International Conference on Cloud Computing, USA, Jun. 27 - Jul. 2, 2016.
- The 2nd IEEE International Conference on Multimedia Big Data, Taiwan, Apr. 20-22, 2016.
- The 16th IEEE International Conference on Bioinformatics and Bioengineering, Taiwan, Oct. 31-Nov. 2, 2016.
- The 21st IEEE International Conference on Web Services, Jun. 27 – Jul. 2, 2014, Alaska, USA
- The National Computing Symposium, Taiwan, Dec 13-14, 2013
- The Cloud Computing Workshop, Taiwan, Dec 27-28, 2012
- The 11th IEEE International Conference on Bioinformatics and Bioengineering, Taichung, Taiwan, Oct. 24-26, 2011.

- The 11th IEEE International Symposium on Multimedia, San Diego, California, Dec. 14-16, 2009.
- The 9th IEEE International Conference on Bioinformatics and Bioengineering, Taiwan, June 22-24, 2009.
- The Third IEEE Asia-Pacific Services Computing Conference (APSCC 2008), Yilan, Taiwan, December 09-12, 2008.
- The 1st IEEE International Workshop on Multimedia, Information Privacy, Intelligent Computing Systems, Yilan, Taiwan, December 09-12, 2008.
- The 2008 IEEE International Conference on Sensor Networks, Ubiquitous and Trustworthy Computing, Taiwan, June 11-13, 2008.
- The 11th Conference on Integrated Design and Process Technology, Taiwan, June 1-6, 2008.
- The 1st IEEE International Workshop on Ambient Semantic Computing, Taiwan, June 11-13, 2008.
- The 9th IEEE International Symposium on Multimedia, Taiwan, Dec. 10-12, 2007.
- The 1st International Symposium on Creativity, Innovation, and Entrepreneurship (INSPIRE07), Taiwan, May 30 – June 1, 2007.
- The 3rd IFIP International Conference on Ubiquitous Intelligence and Computing, Wuhan, China, September, 2006.
- The 1st IEEE International Conference on Sensor Networks, Ubiquitous and Trustworthy Computing, Taiwan, June 5-7, 2006.
- The 7th IEEE International Symposium on Multimedia, Irvine, CA, Dec. 12-14, 2005.
- The 16th IEEE International Symposium on Software Reliability Engineering, Chicago, ILL., Nov. 8-11, 2005.
- The 4th IEEE International Conference on Cognitive Informatics, Irvine, CA, August 2005.
- The 5th IEEE International Symposium on Bioinformatics and Bioengineering, Taiwan, May 2004.
- The 6th Conf. on Engineering Technology and Application of Chinese and

Western Medicine, Taiwan, May 2003.

- The 4th IEEE Multimedia Software Engineering Symposium, Irvine, CA, Dec. 2002.
- 2002 Object-Oriented Technology and Application Workshop, Taiwan Oct. 2002.
- National Information Security Conference, Taiwan, May 2002.
- The 2nd IEEE Multimedia Software Engineering Workshop, Kyoto, Japan, 1998.
- IEEE Knowledge and Data Engineering Exchange Workshop, Irvine, CA, 1997.
- The IEEE International Conference on Tools with Artificial Intelligence, New Orleans, November 1994.
- MACSTA Fall Forum, Mid-America Chinese Science and Technology Association, Lisle, ILL., Nov. 1993.

Program Chair (or Co-Chair)

- The 5th IEEE International Symposium on Autonomous Decentralized Systems, Richardson, Texas, 2001.
- The 3rd IEEE High-Assurance Systems Engineering Symposium, Washington D.C., 1998.
- The 5th IEEE International Conference on Tools with Artificial Intelligence, Boston, 1993.
- The 13th IEEE International Computer Software and Applications Conference, Orlando, Florida, 1989.

Member of Steering Committee or Advisory Committee

- Member of Steering Committee, IEEE International Conference on Multimedia Big Data (BigMM 2020), New Delhi, India, Sep. 24-26, 2020.
- Member, Advisory Board, Vellore Institute of Technology (VIT), India, 2017.
- Member, Steering Committee, The 11th IEEE International Conference on Bioinformatics and Bioengineering, Taichung, Taiwan, Oct. 24-26, 2011.
- Chair, Steering Committee, The 2010 IEEE International Conference on Sensor Networks, Ubiquitous and Trustworthy Computing, Newport Beach, CA, June

7-9, 2010.

- Member, Steering Committee, The IEEE International Conference on Multimedia and Expo (ICME), Singapore, July 21-23, 2010.
- Member, International Advisory Committee, The 5th International Conference on Future Information Technology (FutureTech2010), Jeju, Korea, May 21-23, 2010.
- Member, Steering Committee, The IEEE Technical Committee on Service Computing, IEEE Computer Society, 2009.
- Member, Advisory Committee, 2009 Object-Oriented Technology and Application Workshop, Taiwan, Nov. 2009.
- Member, Technical Steering Committee, The IEEE International Conference on Web Services, Los Angeles, July 6-10, 2009.
- Chair, Steering Committee, The 10th IEEE International Symposium on Multimedia, Berkeley, CA, December 15-17, 2008.
- Member, International Advisory Committee, International Computer Symposium, Taipei, Taiwan, Nov. 13-15, 2008.
- Member, Steering Committee, The 8th IEEE International Conference on Bioinformatics and Bioengineering, Athens, Greece, Oct. 8-10, 2008.
- Member, Technical Advisory Committee, The 2008 International Conference on Web Services, Beijing, China, September 23-26, 2008.
- Member, Steering Committee, The 2nd IEEE International Conference on Semantic Computing, Santa Cruz, CA, August 4-7, 2008.
- Member, Technical Steering Committee, The 2008 IEEE International Conference on Services Computing, Hawaii, July 8-11, 2008.
- Member, Steering Committee, The 5th IFIP International Conference on Ubiquitous Intelligence and Computing (UIC08), Oslo, Norway, June 23-25, 2008.
- Member, International Advisory Committee, The 22nd IEEE International Conference on Advanced Information Networking and Applications (AINA2008), Okinawa, Japan, March 25 – 28, 2008.
- Member, International Advisory Committee, the 3rd International Symposium

on Ubiquitous Application and Security Service (UASS08), Okinawa, Japan, March 25-28, 2008.

- Chair, Steering Committee, The 1st IEEE International Conference on Semantic Computing, Irvine, CA, September 17-19, 2007.
- Member, Advisory Committee, The IEEE International Workshop on Web 2.0 and Multimedia-Enabled Education, Taiwan, Dec. 2007.
- Member, Steering Committee, The 2nd International Workshop on Ubiquitous Applications and Security Service (UASS07), Kuala Lumpur, Malaysia, August 26-30, 2007.
- Member, Steering Committee, The 4th IFIP International Conference on Ubiquitous Intelligence and Computing, Hong Kong, July 11-13, 2007.
- Member, Steering Committee, The 4th IFIP International Conference on Autonomic and Trusted Computing, Hong Kong, July 11-13, 2007.
- Member, International Advisory Committee, The 21st IEEE International Conference on Advanced Information Networking and Applications (AINA2007), Niagara Falls, Canada, May 21-23, 2007.
- Member, Technical Advisory Committee, the 2006 International Conference on Services Computing, Chicago, Illinois, September 18-22, 2006.
- Member, Technical Advisory Committee, the 2006 International Conference on Web Services, Chicago, Illinois, September 18-22, 2006.
- Member, International Advisory Committee, The 20th IEEE International Conference on Advanced Information Networking and Applications (AINA2006), Vienna, April 18- 20, 2006.
- Member, Steering Committee, IEEE International Symposium on Multimedia, San Diego CA, Dec. 12-14, 2006.
- Member, International Advisory Committee, The 2nd International Symposium on Ubiquitous Intelligence and Smart Worlds (UISW2005), Nagasaki, Japan, Dec. 6-7, 2005.
- Member, Technical Advisory Committee, the 2005 International Conference on Web Services, Orlando, Florida, July 11-15, 2005.
- Member, International Advisory Committee, IEEE International Conf. on Multimedia and Expo., Taipei, 2004.

- Member, Advisory Board, International Journal of Fuzzy Systems, 2003-present.
- Member, Technical Advisory Committee, the 2003 International Conference on Web Services, Las Vegas, Nevada, June 23-26, 2003.
- Member, Advisory Board, Tamkang Journal of Science and Engineering, 2002 - present.
- Member, Steering Committee for IEEE Transactions on Multimedia, 2000-2003.
- Member, Track Advisory Committee, 1994 ACM Symposium on Applied Computing (SAC '94), 1994.
- Member, Steering Committee, IEEE International Knowledge and Data Engineering Workshop, 1997- 1998.
- Member, Steering Committee, IEEE International Conference on Tools with A.I., 1994-present.

Other Committee Activities:

- Session Organizer, the 11th IEEE Symposium on Object/Component/Service-oriented Real-time Distributed Computing (ISORC08), May 5-7, 2008.
- Judge, the Illinois Junior Academy of Science, March 14, 2007.
- Track Chair, IEEE International Conf. on Multimedia and Expo., Baltimore, Maryland, July 6-9, 2003.
- Co-Organizer, 3rd Intelligent Software Engineering Workshop, in conjunction with IEEE International Conference on Software Engineering, Ireland, 2000.
- Track Chair, The 4th World Congress on Integrated Design and Process Technology, Turkey, 1999.
- Session Organizer, Panel session on "E-Commerce," IEEE Knowledge and Data Engineering Exchange Workshop, 1998.
- Track Chair, The 2nd World Congress on Integrated Design and Process Technology, Austin, TX, 1997.
- Program Vice-Chair, 19th IEEE International Computer Software and Applications Conference, Dallas, August, 1995.
- Tutorial Chairman, IEEE International Conference on Requirements Engineering, Colorado, April 1994.
- Tutorial Chairman, International Conference on Parallel and Distributed

Systems, December 1993.

- Judge of IEEE Richard E. Merwin Scholarships, 1993.
- Tutorial Co-Chairman, IEEE International Computer Symposium, Dec. 1992.
- Workshop Organizer, 1992 Real-Time Systems Workshop, Taipei, 1992.
- Session Organizer, Panel session on "Is Artificial Intelligence the Solution to Software Engineering" 1991 International Conf. on Tools for A.I., San Jose, CA, 1991.
- Session Organizer, Paper session on "Artificial Intelligence and Software Engineering" 1990 International Conf. on Tools for A.I., Fairfax, VA, 1990.
- Workshop Organizer, 1990 Software Engineering Workshop, Academia Sinica, Taipei, 1990.
- Session Organizer, Panel session on "Critical Issues of Real-Time Software Systems" COMPSAC'89, Orlando, Florida.
- Finance Chairman, IEEE International Computer Software and Applications Conference, 1986-1988.
- Member, Conference Committee, IEEE International Computer Software and Applications Conference, 1983, 1985.

Member of Technical Program Committee:

- The 4th IEEE Asia-Pacific Services Computing Conference (APSCC 2009), Singapore, December 07-11, 2009.
- 1st IEEE International Conference on Cloud Computing, Bangalore, India, Sept. 21-25, 2009.
- The 21st International Conference on Software Engineering and Knowledge Engineering, Boston, July 1-3, 2009.
- 8th IEEE International Conference on Cognitive Informatics, Hong Kong, June 15-17, 2009.
- 9th IEEE International Conf. on Autonomous Decentralized Systems, Greece, March 23-25, 2009.
- 7th IEEE International Conference on Cognitive Informatics, Stanford University, CA, August 14-16, 2008.
- The First IEEE International Workshop on Cyber-Physical Systems, Sponsored by National Science Foundation of the United States, in conjunction

with IEEE ICDCS 2008, Beijing, China, June 17-20, 2008.

- IFIP International Conference on Embedded and Ubiquitous Computing, Taipei, Dec. 2007.
- 6th IEEE International Conference on Cognitive Informatics, Lake Tahoe, CA , August 6-8, 2007.
- International Conference on Parallel Processing, Columbus, Ohio, August 14-18, 2006.
- The 2nd International Conference on Innovations and Real-time Applications of Distributed Sensor Networks, Washington D.C. October 18-19, 2006.
- IEEE International Conference on Web Services, Chicago, Sept. 18-22, 2006.
- 5th IEEE International Conference on Cognitive Informatics, Beijing, July 17-19, 2006.
- 17th IEEE International Symposium on Software Reliability Engineering, North Carolina, Nov. 6-10, 2006.
- International Conference on Software Engineering and Knowledge Engineering, 1993, 1994, 1995, 2000, 2004, 2005, 2006.
- 5th International Conference on Quality Software, Melbourne, Australia, Sept. 19-21, 2005.
- 2005 IEEE International Conf. on Multimedia and Expo., Amsterdam, 2005
- 2005 IEEE International Collaborative Computing, Cape Code, June 2005.
- 2005 IEEE International Service Computing, Orlando, July 12-15, 2005.
- IEEE Symposium on High-Assurance Systems Engineering, 2004.
- IEEE International Conference on Electronic Commerce (CEC'03), Newport Beach, California, June 2003.
- 2003 International Conference on Web Services, Las Vegas, Nevada, June 23 - 26, 2003.
- SEKE2003 15th International Conference on Software Engineering and Knowledge Engineering, San Francisco Bay, July 1-3, 2003
- 15th IEEE International Conference on Tools with Artificial Intelligence, Sacramento, California, November 3-5, 2003.
- 11th World-Wide-Web Conference, Hawaii, 2002.
- 4th IEEE International Workshop on Advanced Issues of E-Commerce and Web-Based Information Systems(WECWIS 2002), Newport Beach, California, June

2002

- 14th International Conference on Software Engineering and Knowledge Engineering (SEKE'02), Ischia, Italy, July 15-18, 2002.
- IEEE International Computer Software and Applications Conference, 1995, 1996, 1997, 2000, 2001.
- The Second Workshop on Agent-Oriented Software Engineering in conjunction with 5th International Conference on Autonomous Agents (Agents 2001), Montreal, Canada, May/June 2001.
- First International Workshop on Internet Bots: Systems and Applications (INBOSA2001)" in conjunction with the 12th International Conference on Database and Expert Systems Applications, Munich, Germany, September 3-7, 2001.
- IDPT 5th World Congress on Integrated Design and Process Technology, Dallas, 2000.
- 3rd IEEE Symposium Application-specific Systems and Software Engineering and Technology (ASSET'00), Richardson, Texas, March 24-25, 2000.
- 3rd IEEE Knowledge and Data Engineering Exchange Workshop, Evanston, IL, 2000.
- International Workshop on Agent-Based Information Systems (ABIS'2000) Greenwich, United Kingdom, September 4-8, 2000.
- The First International Workshop on Agent-Oriented Software Engineering (AOSE-2000), Limerick, Ireland, June 10, 2000.
- IEEE International Conference on Data Engineering, 1999.
- IEEE International Conf. on Autonomous Decentralized Systems, 1999.
- IEEE Symposium on Object-Oriented Real-Time Computing, 1998.
- IEEE Workshop on Object-Oriented Dependable Real-Time Systems, 1997.
- IEEE High-Assurance Systems Engineering Workshop, 1996, 1997.
- IEEE 2nd Requirement Engineering Symposium, 1996.
- International Conference on Artificial Intelligence, 1996.
- IEEE International Conference on Data Engineering, 1995.
- 4th ACM Information and Knowledge Management Conference, 1995.
- IEEE International Parallel and Distributed Processing Conference, 1994.

Session Chair:

- The 9th IEEE International Conference on Bioinformatics and Bioengineering, Taiwan, June 22-24, 2009.
- The 11th Conference on Integrated Design and Process Technology, Taiwan,

June 1-6, 2008.

- Education in Software Engineering, IEEE Computer Software and Applications Conference, Oct. 2000.
- Artificial Intelligence and Software Engineering, 11th IEEE International Conference on Tools with Artificial Intelligence, Evanston, IL, November 1999.
- Artificial Intelligence Applications, IEEE Knowledge and Data Engineering Exchange Workshop, Evanston, IL, November 1999.
- Resource Management, IEEE Real-Time Technology and Application Symposium, Chicago, IL, May 1995.
- Knowledge and Data Base, IEEE International Conference on Software Engineering and Knowledge Engineering, Skokie, IL, June 1992.
- Panel session on "Expert Systems and Software Engineering" in COMPSAC'88, Chicago, Illinois.
- Panel session on "Software Management and Quality Control" in COMPSAC'87, Tokyo, Japan.

Referee:

- IEEE Transactions on Software Engineering
- IEEE Transactions on Knowledge and Data Engineering
- IEEE Transactions on Parallel and Distributed Systems
- IEEE Transactions on Reliability
- IEEE Transactions on System, Man, and Cybernetics
- IEEE Transactions on Dependable and Secure Computing
- IEEE Transactions on Computer
- IEEE Transactions on Mobile Computing
- ACM Transactions on Autonomous and Adaptive Systems
- Communication of ACM
- IEEE Computer
- IEEE Software
- Journal of Formal Methods in Systems Design
- Journal Parallel and Distributed Computing
- IEE Software Engineering Journal,
- Journal of Data and Knowledge Engineering
- Springer
- Kluwer Academic Publishers
- John Wiley & Sons, Inc.
- Imperial College Press
- World Scientific Pub.

- Hong Kong Research Grants Council, 1999-2008
- NSF, and numerous conferences

Member of Professional Society:

- AAAI
- ACM
- IEEE
- IEEE Computer Society
- SDPS
- Upsilon Pi Epsilon.

Committee and Administrative Work:

- Chair, Colloquium Committee, 2007-2009.
- Senator, University of Illinois at Chicago, 2005-2008.
- Member, College Executive Committee, 2005-2006.
- Chair, Colloquium Committee, 2006-2007.
- Member, ECE Department Head Review Committee, 2005-2006.
- Chair, Colloquium Committee, 2005-2006.
- Chair, Best Dissertation Award Committee, 2005-2006.
- Member, Faculty Search Committee, 2003-2004.
- Member, Graduate Admission Committee, 2003-2004.
- Chair, Colloquium and Research Committee, 1999-2000.
- Member, College Executive Committee, 1997-1999.
- Chair, Faculty Search Committee, 1998-1999.
- Full Member, Graduate College, 1990-present.
- Member, Undergraduate Committee, 1985-1989.
- Member, Graduate Committee, 1990-1996.
- Member, Computer Committee, 1992-1993.
- Member, Departmental Advisory Committee, 1997-1998.

Graduate Students Supervised:

Dr. Tsai has supervised 11 Ph.D. theses and over 70 M.S. theses and reports. Horng-Yuan Chen (1990, AT&T), Huan-Chin Jang (1991, National Cheng-Chi University), Ray-Yuan Sheu (1992, US West), Yao-Dong Bi (1993, Cranton University), Alan Liu (1994, National Chung-Ching University), Bing Li (1996, U-Tech), Stephen Yang (1996, National Central University), Eric Juan (1998, National Taiwan Ocean University), Dinesh Kadamuddi (2000, Lucent), Lu Ma (2005, NCR), Zhenwei Yu (2007, World Evolved Services, LLC).

Invited Talks:

1. "A Framework of Machine Learning based Intrusion Detection for Wireless Sensor Networks," The 2nd IEEE International Conference on Sensor Network, Ubiquitous, and Trustworthy Computing (SUTC2008), Taichung, Taiwan, June 11-13, 2008.
2. "Global Network for Transdisciplinary Collaboration," 11th SDPS Transdisciplinary Conference on Integrated Design and Process Science, June 1-6, Taichung, Taiwan, 2008.
3. "Personal Sense of Persistent Fundamental Research Enquiry," Stanford University, Kozmetsky Global Collaboratory: Tenth Anniversary Celebration, Workshop on KGC Community's Shared Research Aspirations, Palo Alto, CA, May 12-18, 2007.
4. "Fuzzy Model Tuning for Intrusion Detection Systems," The 3rd IFIP International Autonomic and Trusted Computing Conference, Wuhan, China, Sept. 2006.
5. "A Framework for Adaptive Intrusion Detection Systems," NSF/Industry Software Engineering Research Center, Ball State Univeristy, Muncie, IN, Nov. 16-17, 2005.
6. "Transdisciplinary Research and Education in Healthcare, Management, and Information Technology," China Medical University Hospital, Dec. 2002.
7. "Specification and Verification of Software Agents," Academia Sinica, Taipei, Oct. 2000.
8. "Compositional Approach for Modeling and Verification of Software Systems," University of Toronto, Canada, Dec. 2000.
9. "Compositional Verification of Software Architecture," *NSF/ARO Workshop on Evolutionary Software Construction*, Italy, 2000.
10. "E-Commerce," *IEEE Knowledge and Data Engineering Exchange Workshop*, Nov. 1998.
11. "Compositional Verification," *NSF Workshop on Foundation of Software Systems*, Tulane University, Dec. 1997.
12. "Formal Verification of Software Architecture," University of Southern California, Feb. 1997.
13. "Knowledge-Based Software Architecture," National Central University, May 1997.
14. Tutorial on "A Knowledge-based Approach to Software Architecture," the *7th IEEE Tools with Artificial Intelligence Conference*, Washington, D.C., Nov. 1995.

15. "Research Issues in Software Architecture Design," University of Houston, Houston, Texas, Oct. 1995.
16. "A Specification-Based Software Architecture," Naval Postgraduate School, Monterey, CA, Sept. 1995.
17. "Software Technology in National Information Infrastructure," *National Development Symposium*, Taipei, Taiwan, June 1995.
18. Tutorial on "Knowledge-Based Software Development for Real-Time Distributed Systems," *International Computer Symposium*, National Chiao-Tung University, Hsinchu, Taiwan, Dec. 1994.
19. "Knowledge-Based Software Engineering for Real-Time Distributed Systems," University of Texas at Austin, June 1994.
20. "Knowledge-Based Software Requirements Specification Language," State University of New York at Buffalo, Buffalo, New York, May 1994.
21. "Knowledge-Based Approach for the Specification, Analysis, and Transformation of Real-Time Distributed Systems," University of California at Berkeley, CA, Feb. 1994.
22. "Knowledge-Based Software Design for Real-Time Distributed Systems," University of Toronto, Toronto, Ontario, Jan. 1994.
23. "Knowledge-Based Software Engineering," USAF Rome Laboratory, Jan. 1994.
24. "A Requirements Language for Autonomous Decentralized Systems," Hitachi System Plaza, Japan, April 1993.
25. "Knowledge-Based Approach to the Specification, Analysis, and Transformation of Real-Time Distributed Systems," Fujitsu Lab, Kawasaki, Japan, April 1993.
26. "Visualization and Debugging of Distributed Real-Time Systems," Hitachi, Japan, March 1993.
27. "Visualization and Debugging of Distributed Real-Time Systems," *1992 International Conference on Automation, Robotics, and Computer Vision*, Singapore, Sept. 1992.
28. "On Distributed Real-Time Systems Monitoring, Visualization, and Debugging," Chung-Shan Institute of Science and Technology, Long-Tang, June 1992.
29. "Artificial Intelligence for Software Engineering," National Taiwan University, Taipei, Taiwan, Sept. 1991.
30. "A.I./K.E. Techniques for Software Engineering" *Fujitsu International Software Symposium*, Fujitsu Limited, Kawasaki, Japan, Sept. 1991.
31. "A Distributed Cooperative Agents Architecture for Software Development," *IJCAI Workshop on Intelligent and Cooperative Information Systems*, University of Technology, Sydney, Australia, Aug. 1991.

32. Tutorial on "Artificial Intelligence Technique for Software Engineering," 1991 *International Conference on Software Engineering and Knowledge Engineering*, Skokie, IL, June 1991.
33. *Conference on Tools for A.I.*, Fairfax, VA, Nov. 1990.
34. Tutorial on "Artificial Intelligence for Software Engineering," 1990 *IEEE International*
35. "Artificial Intelligence and Software Engineering," Academia Sinica, Taiwan, Aug. 1990.
36. "On Real-Time Distributed Monitoring," Tung-Hai University, May 1990.
37. Switching System Group, Fujitsu Laboratory, Kawasaki, Japan, March 1990.
38. "FRORL: A Requirement Language for New Software Engineering Paradigms,"
39. "A Frame-and-Rule Based System for Software Development Using an Integrated Software Engineering Paradigm," George Mason University, Fairfax, VA, Jan. 1990.
40. "Real-Time Software Testing and Debugging," one-week seminar at National Chiao-Tung University, Taiwan, August 1989.
41. "Reverse Engineering," Institute of Information Industry, Taiwan, July 1989.
42. "A Frame-and-Rule Oriented Requirements Specification Language for New Software Engineering Paradigm," Institute of Information Industry, Taiwan, July 1989.
43. "A Frame-and-Rule Oriented Requirements Specification Language for New Software Engineering Paradigm," University of Florida, Gainesville, July 1989.
44. "A Requirement Theory of New Software Engineering Paradigms," Switching System Group, Fujitsu Laboratory, Kawasaki, Japan, Oct. 1987.

Grant Activities :

1. Title: The Strong Kidney Initiative: A Multicenter-Randomized Trial to Validate the Effectiveness of a Clinical Kidney Intelligence Platform Based on Big Data, Artificial Intelligence, and Blockchain Technology
 - Period: 2020-2024
 - Amount: NT\$36,000,000
 - Source: Ministry of Science and Technology
2. Title: Develop APP for Collecting Screen/Face Data and Extracting Addiction Information by Using Artificial Intelligence Model
 - Period: 2019-2021
 - Amount: NT\$3,651,000
 - Source: Ministry of Science and Technology
3. Title: Development of Big Data Lake and System Architecture for Artificial Intelligence-Based Institutional Research
 - Period: 2017-2019

- Amount: NT\$9,272,000
 - Source: Ministry of Science and Technology
4. Title: 虛實整合之區塊鏈平臺應用於臨床試驗和腦中風研究
 - Period: 2017-2018
 - Amount: NT\$4,635,000
 - Source: Ministry of Science and Technology
 5. Title: Precision Medicine Research for Cancer Treatments based on Biomedical Big Data Analysis.
 - Period: 2016-2018
 - Amount: NT\$12,500,000
 - Source: Ministry of Science and Technology
 6. Title: 利用物聯網技術建立新興菇類量產及保健商品開發平台
 - Period: 2015-2018
 - Amount: NT\$9,267,700
 - Source: Ministry of Science and Technology
 7. Title: Interpretation and Construction of the Customer Delight Code -- Customers' Physical and Mental signals and Service Innovation for Leisure Experiences
 - Period: 2014-2016
 - Amount: NT\$4,838,000
 - Source: Ministry of Science and Technology
 8. Title: Integrative Computational-Medicine for Coronary Atherosclerotic Disease
 - Period: 2013-2016
 - Amount: NT\$15,000,000
 - Source: Ministry of Science and Technology
 9. Title: 協同網路作業系統
 - Period: 2010-2013
 - Amount: NT\$643,000
 - Source: Ministry of Science and Technology
 10. Title: 利用環控管理技術提升重要藥用菇類之生產及利用-重要藥用菇類環控栽培技術改進
 - Period: 2010-2013
 - Amount: NT\$18,000,000
 - Source: Ministry of Science and Technology
 11. Title: Integrated Systems Biology for Arabidopsis thaliana
 - Period: 2010-2013
 - Amount: NT\$14,406,000
 - Source: National Science Council
 12. Title: Semantic Integration of Biomedical Analysis Methods
 - Period: 2007-2010
 - Amount: NT\$1,964,000

- Source: National Science Council
13. Title: Research on Cancer-Related Genes Mining Systems
 - Period: 2007- 2008
 - Amount: US\$68,000
 - Source: Wei Company
 14. Title: A Dual Adaptive Approach for Detecting Internal/External Intrusion
 - Period: 2006-2007
 - Amount: US\$27,902
 - Source: Motorola Inc.
 15. Title: An Adaptive System for Detecting Internal/External Intrusion
 - Period: 2005-2006
 - Amount: US\$25,798
 - Source: Motorola Inc.
 16. Title: A Framework for Cancer-related Genes Mining
 - Period: 2004-2007
 - Amount: NT\$30,320,000
 - Source: National Science Council
 17. Title:台電保全事業營運規劃之研究
 - Period: 2003-2004
 - Amount: NT\$4,445,000
 - Source: Taiwan Power Company
 18. Title:災後生活重建計劃—霧峰地區學校教學及學生輔導計畫
 - Period: 2003-2004
 - Amount: NT\$1,140,800
 - Source: Ministry of Education
 19. Title:災後生活重建計劃—霧峰地區學校教學及學生輔導計畫
 - Period: 2003-2004
 - Amount: NT\$1,140,800
 - Source: Ministry of Education
 20. Title: Modeling and Verification of Software Agents
 - Period: 2002-2005
 - Amount: NT\$2,456,800
 - Source: National Science Council
 21. Title:霧峰實驗--九二一重建生活教育學習空間(I)
 - Period: 2002
 - Amount: NT\$435,840
 - Source: Ministry of Education
 22. Title: Application of Knowledge Management Platform to Bioinformatics Education
 - Period: 2002-2003

- Amount: NT\$864,000
 - Source: National Science Council
23. Title: A Framework for Cancer-Related Genes Mining Systems
- Period: 2003-2007
 - Amount: US\$117,000
 - Source: Wei-I Consulting Company
24. Title: Performance Modeling and Analysis of Distributed Real-Time Systems
- Period: 2001 – 2005
 - Amount: US\$260,000 (with T. Murata)
 - Source: National Science Foundation
25. Title: An Aspect-Based Approach for Analyzing Security System Architectures
- Period: 2001 – 2005
 - Amount: US\$270,000 (with Y. Deng)
 - Source: National Science Foundation
26. Title: Automatic Test Cases Generation of Requirements Specifications
- Period: 1996 – 2000
 - Amount: US\$125,000
 - Source: Motorola Inc.
27. Title: A Formal Approach for Software Architecture of Real-Time Systems
- Period: 1996-1999
 - Amount: US\$191,000 (with P. Sistla)
 - Source: National Science Foundation and DARPA
28. Title: Incremental Verification of Software Architecture
- Period: 1998-1999
 - Amount: US\$10,000
 - Source: Army Research Lab.
29. Title: Software Architecture Specification of Multimedia Systems
- Period: 1996 - 1998
 - Amount: US\$83,362
 - Source: Fujitsu Network Communications, Inc.
30. Title: A Knowledge-Based Approach to the Specification, Analysis and Transformation of Real-Time Distributed Software Systems
- Period: 1988 - 1996
 - Amount: US\$308,362
 - Source: Fujitsu Network Communications, Inc.
31. Title: Metric-Based Software Architecture
- Period: 1996-1997
 - Amount: US\$15,000
 - Source: Army Research Lab.
32. Title: A Framework for Evaluation and Assurance of Knowledge-Based Systems

- Period: 1994-1997
 - Amount: US\$109,500
 - Source: US Air Force Research Lab.
33. Title: Debugging of Real-Time Distributed Systems
- Period: 1992 – 1994
 - Amount: US\$98,000
 - Source: National Science Foundation
34. Title: CASE Tools and Software Engineering Environment
- Period: 1990 – 1993
 - Amount: US\$500,000 (with T. Moher)
 - Source: GTECH
35. Title: A Methodology for Knowledge-Based Debugging of Real-Time Software
- Period: 1989 – 1991
 - Amount: US\$57,877
 - Source: National Science Foundation
36. Title: Travel Grant
- Period: 1991
 - Amount: US\$6,000
 - Source: National Science Foundation
37. Title: A Knowledge-Based Approach to Debugging Real-Time System
- Period: 1988 – 1989
 - Amount: US\$20,000
 - Source: IEEE + Engineering Foundation Society
38. Title: A User Friendly Software Development Environment for FASTBUS
- Period: 1987 - 1989
 - Amount: US\$75,000
 - Source: National Fermi Laboratory + Kinetic System Inc.
39. Title: A Knowledge-Based Software Maintenance Environment
- Period: 1987 - 1988
 - Amount: US\$6,600
 - Source: Campus Research Board, University of Illinois at Chicago
40. Title: A Knowledge-Based Approach to Rapid Prototyping
- Period: 1986 - 1988
 - Amount: US\$240,000 (with C. Chang)
 - Source: Fujitsu America, Inc.