Chee Wei Tan

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EDUCATION
◇ Princeton University, Princeton, NJ
M.A. 2006, Ph.D. in Electrical Engineering 2008.

◇ National University of Singapore
B.S. in Electrical Engineering (First Class Honors) 2002.

APPOINTMENTS
◇ Associate Professor, College of Computing and Data Science, Nanyang Technological University, Singapore, 2022-present

◇ Associate Professor, Department of Computer Science, City University of Hong Kong, 2010-2021

◇ Visiting Faculty, Tencent AI Lab, 2018

◇ Visiting Faculty, Qualcomm R&D (QRC), California 2011

◇ Postdoctoral Scholar, Department of Computing and Mathematical Sciences, California Institute of Technology, Pasadena, California 2008-2009

RESEARCH EXPERTISE
◇ Generative AI and Large Language Models

◇ Distributed Optimization

◇ Network Science (Wireless, Cyber)

AWARDS AND HONOR
◇ Honorable Mention Paper Award in Foundation Models and Generative AI, IEEE Conference on Artificial Intelligence, 2024

◇ Best Student Paper Award, IEEE 20th International Conference on Mobility, Sensing and Networking, 2024

◇ Sayling Wen Cultural & Educational Foundation Faculty Scholarship 2024

◇ Distinguished Lecturer of IEEE Communications Society (2020-2023)

◇ Teaching Excellence Award of City University of Hong Kong 2021

◇ Senior Fellowship at Institute for Pure and Applied Mathematics (IPAM) for Program on Science at Extreme Scales 2018

◇ Google Faculty Award 2019

◇ Selected Participant, U.S. National Academy of Engineering China-America Frontiers of Engineering (CAFOE) Symposium, 2013 and 2015

◇ IEEE Communications Society Outstanding Young Researcher Award

◇ Princeton University Wu Prize for Excellence

RECENT PUBLICATION
◇ M. F. Wong and C. W. Tan, *Aligning Crowd-sourced Human Feedback for Reinforcement Learning on Code Generation by Large Language Models*, IEEE Transactions on Big Data, Special Issue on Pre-Trained Large Language Models, 2025.

◇ P. D. Yu and C. W. Tan, *Unraveling the Viral Spread of Misinformation: Maximum-Likelihood Estimation and Starlike Tree Approximation in Markovian Spreading Models*, IEEE Transactions on Signal Processing, accepted, 2025.

◇ Y. Wang, S. Guo, C. W. Tan, *Contextual Augmented Multi-Model Programming (CAMP): A Hybrid Local-Cloud Copilot Framework*, https://arxiv.org/abs/2410.15285v1 2024.

⬦ L. Chen, D. Zhao, L. Tao, K. Wang, S. Qian, X. Zeng and C. W. Tan, *A Credible and Fair Federated Learning Framework Based on Blockchain*, IEEE Transactions on Artificial Intelligence, 2025.

⬦ C. W. Tan, P.-D. Yu, S. Chen and H. V. Poor, *DeepTrace: Learning to Optimize Contact Tracing in Epidemic Networks with Graph Neural Networks*, IEEE Transactions on Signal and Information Processing over Networks, accepted, 2025.

⬦ Y. Jiang, J. Shen, Z. Liu, C. W. Tan, K.-Y. Lam, *Towards Efficient and Certified Recovery from Poisoning Attacks in Federated Learning*, IEEE Transactions on Information Forensics & Security, accepted, 2025.

⬦ R. Tu, X. Kang, C. W. Tan, C. H. Chi, K.-Y. Lam, *All Points Guided Adversarial Generator for Targeted Attack Against Deep Hashing Retrieval*, IEEE Transactions on Information Forensics & Security, accepted, 2025.

⬦ L. Tao, Y. Lu, Y. Fan, C. W. Tan, Z. Wei, *Optimized Consensus Group Selection Focused on Node Transmission Delay in Sharding Blockchains*, IEEE Transactions on Computational Social Systems, to appear, 2025.

⬦ S. Chen, C. W. Tan, X. Zhai and H. V. Poor, *OpenRANet: Neuralized Spectrum Access by Joint Subcarrier and Power Allocation with Optimization-based Deep Learning*, IEEE Transactions on Green Communications and Networking, 2025.

⬦ J. Zhou, H. Liang, T. Wu, X. Zhang, J. Yu, C. W. Tan, *VFL-Cafe: Communication-Efficient Vertical Federated Learning via Dynamic Caching and Feature Selection*, Entropy, Vol. 27(1):66, 2025.

⬦ L. Tao, Y. Lu, Y. Fan, L. Shi, C. W. Tan, Z. Wei, *Throughput-Scalable Shard Reorganization Tailored to Node Relations in Sharding Blockchain Networks*, IEEE Transactions on Computational Social Systems, Vol. 11, No. 6, pp. 7271-7285, 2024.

⬦ Md T. R. Laskar, S. Alqahtani, M. S. Bari, M. Rahman, M. A. M. Khan, H. Khan, I. Jahan, Md A. H. Bhuiyan, C. W. Tan, Md R. Parvez, E. Hoque, S. Joty and X. Huang, *A Systematic Survey and Critical Review on Evaluating Large Language Models: Challenges, Limitations, and Recommendations*, The 2024 Conference on Empirical Methods in Natural Language Processing (EMNLP), 2024.

⬦ Y. Zhang, T. Gao, C. Li and C. W. Tan, *Coded Federated Learning for Communication-Efficient Edge Computing: A Survey*, IEEE Open Journal of the Communications Society, Vol. 5, pp. 4098-4124, 2024.

⬦ Z. Zhan, W. Zhao, Y. Li, W. Liu, X. Zhang, C. W. Tan, C. Wu, D. Guo, X. Chen, *FedMoE-DA: Federated Mixture of Experts via Domain Aware Fine-grained Aggregation*, The 20th International Conference on Mobility, Sensing and Networking 2024

⬦ L. Chen, W. Zhang, C. Dong, D. Zhao, X. Zeng, S. Qiao, Y. Zhu, C. W. Tan, *FedTKD: A Trustworthy Heterogeneous Federated Learning Based on Adaptive Knowledge Distillation*, Entropy, 26(1), 96, 2024.

⬦ L. Chen, W. Zhang, C. Dong, Z. Huang, Y. Nie, Z. Hou, S. Qiao, C. W. Tan, *FedDRL: Trustworthy Federated Learning Model Fusion Method Based on Staged Reinforcement Learning*, Computing and Informatics, 43(1): pp. 1-37, 2024.

⬦ D. T. K. Ng, C. W. Tan, J. K. L Leung, *Empowering Student Self-regulated Learning and Science Education through ChatGPT: A Pioneering Pilot Study*, British Journal of Educational Technology, Vol. 55, Issue 4, pp. 1328-1353, 2024.

⬦ C. N. Hang, P. D. Yu and C. W. Tan, *MCQGen: A Large Language Model-Driven MCQ Generator for Personalized Learning*, IEEE Access, Vol. 12, pp. 102261-102273, 2024.

⬦ M. F. Wong and C. W. Tan, *Aligning Crowd-sourced Human Feedback for Code Generation with Bayesian Inference*, IEEE Conference on Artificial Intelligence, 2024.

◇ C. Hang, P. Yu and C. W. Tan, *TrumorGPT: Query Optimization and Semantic Reasoning over Networks for Automated Fact-Checking*, 58th Annual Conference on Information Sciences and Systems (CISS), 2024

◇ P.-D. Yu, L. Zheng and C. W. Tan, *Contagion Source Detection by Maximum Likelihood Estimation and Starlike Graph Approximation*, 58th Conference on Information Sciences and Systems (CISS), 2024.

◇ S. Chen and C. W. Tan, *Neural Sum Rate Maximization for AI-Native Wireless Networks: Alternating Direction Method of Multipliers Framework and Algorithm Unrolling*, ACM MobiSys 2024 International Workshop on Networked AI Systems, 2024.

◇ C. W. Tan, *Large Language Model-Driven Classroom Flipping: Empowering Student-Centric Peer Questioning with Flipped Interaction*, IEEE CAI AI for Education Workshop, CoRR abs/2311.14708, 2024

◇ H. Liang, Z. Zhan, W. Liu, X. Zhang, C. W. Tan and X. Chen, *FedReMa: Improving Personalized Federated Learning via Leveraging the Most Relevant Clients*, 27th European Conference on Artificial Intelligence, 2024.

◇ T. Gao, J. Lin, C. Li and C. W. Tan, *Federated Learning Meets Network Coding: Efficient Coded Hierarchical Federated Learning*, IEEE Information Theory Workshop, 2024.

◇ Y. Jiang, C. W. Tan and K.-Y. Lam, *Accelerating Federated Unlearning via Polyak Heavy Ball Method*, IEEE Information Theory Workshop, 2024.

◇ C. Zhao, Z. Wang, Q. Zhou, C. W. Tan and C. Chan, *Infodemic Source Detection: Enhanced Formulations with Information Flow*, IEEE International Symposium on Information Theory (ISIT), 2024.

◇ S. Fu, X. Zhai, C. Yi, L. Pang and C. W. Tan, *Energy Efficient and Low Latency Computation Offloading via Truly PPO in Mobile Edge Computing Networks with Multi-UAV*, The 17th IEEE International Conference on Internet of Things (iThings), 2024.

◇ J.-Y. Zeng, F.-H. Tseng and C. W. Tan, *Physical Adversarial Example in Car Plate Recognition Systems based on SA Algorithm*, IEEE Consumer Electronics Magazine, 2024.

◇ Y. Wang, S. Guo, L. Ling and C. W. Tan, *Nemobot: Crafting Strategic Gaming LLM Agents for K-12 AI Education*, ACM Learning at Scale, 2024.

◇ S. C. Fung, M. F. Wong and C. W. Tan, *Automatic Feedback Generation on K-12 Students' Data Science Education by Prompting Cloud-based Large Language Models*, ACM Learning at Scale, 2024.

◇ C. W. Tan, S. Guo, M. Wong, C. Hang, *Copilot for Xcode: Exploring AI-Assisted Programming by Prompting Cloud-based Large Language Models*, International Joint Conference on Artificial Intelligence (IJCAI) Symposium on Large Language Models, 2023

◇ M.-F. Wong, S. Guo, C. Hang, S. Ho, C. W. Tan, *Natural Language Generation and Understanding of Big Code for AI-Assisted Programming: A Review*, Entropy, 25(6):888, 2023

◇ C. W. Tan, P.-D. Yu, *Contagion Source Detection in Epidemic and Infodemic Outbreaks: Mathematical Analysis and Network Algorithms*, Foundations and Trends in Networking, Vol. 13, No. 2-3, pp. 107-251, 2023

◇ C. Li, Y. Zhang, C. W. Tan, *Fault-Tolerant Computation Meets Network Coding: Optimal Scheduling in Parallel Computing*, IEEE Transactions on Communications, Vol. 71, No. 7, pp. 3847-3860, 2023

◇ Y. Zhang and C. Li, C. W. Tan, *On Symmetric Multilevel Diversity Coding System With Linear Computations*, IEEE Communications Letters, Vol. 27, No. 8, pp. 1994-1998, 2023

◇ C. Hang, P. Yu, S. Chen, C. W. Tan, G. Chen, *MEGA: Machine Learning-Enhanced Graph Analytics for Infodemic Risk Management*, IEEE Journal of Biomedical and Health Informatics, Vol. 27, No. 12, pp. 6100-6111, 2023

⬦ C. Hang, Y. Tsai, P. D. Yu, J. Chen, C. W. Tan, *Privacy-Enhancing Digital Contact Tracing with Machine Learning for Pandemic Response: A Comprehensive Review*, Big Data Cognitive Computing, Vol. 7, No. 2: 108, 2023

⬦ M.-F. Wong, X. Qi, C. W. Tan, *EuclidNet: Deep Visual Reasoning for Constructible Problems in Geometry*, Adv. Artif. Intell. Mach. Learn., Vol. 3, No. 1, pp. 839-853, 2023

⬦ S. Chen and Chee-Wei Tan, *Neural Sum Rate Maximization with Deep Unrolling*, IEEE GLOBECOM 2023

⬦ P.-D. Yu, C. W. Tan and H.-L. Fu, *Epidemic Source Detection in Contact Tracing Networks: Epidemic Centrality in Graphs and Message-Passing Algorithms*, IEEE Journal of Selected Topics in Signal Processing, Vol. 16, No. 2, pp. 234-249, 2022

⬦ Z. Fei, Y. Ryeznik, A. Sverdlov, C. W. Tan and W. K. Wong, *An Overview of Healthcare Data Analytics with Applications to the COVID-19 Pandemic*, IEEE Transactions on Big Data, Vol. 8, No. 6, pp. 1463-1480, 2022

⬦ C. W. Tan, *The Value of Cooperation: From AIMD to Flipped Classroom Teaching*, ACM SIGMETRICS Performance Evaluation Review, Vol. 49, No. 4, pp. 8-13, 2022

⬦ S. Chen, P.-D. Yu, C. W. Tan and H. V. Poor, *Identifying the Superspreader in Proactive Backward Contact Tracing by Deep Learning*, 56th Annual Conference on Information Sciences and Systems (CISS), 2022

⬦ C. Li, S. Chen, C. W. Tan, *Fast Breadth-First Search Approximation for Epidemic Source Inference*, 56th Annual Conference on Information Sciences and Systems (CISS), 2022

⬦ J. Li, C. W. Tan, C. Hang and X. Qi, *A Chatbot-Server Framework for Scalable Machine Learning Education through Crowdsourced Data*, ACM Learning at Scale, 2022

⬦ L. Ling, C. W. Tan, *Peer-Grading at Scale with Rank Aggregation*, ACM Learning at Scale 2021

⬦ J. Li, L. Ling and C. W. Tan, *Blending Peer Instruction with Just-In-Time Teaching: Jointly Optimal Task Scheduling with Feedback for Classroom Flipping*, ACM Learning at Scale, 2021

⬦ D. Song, X. Zhai, X. Liu, C. W. Tan, *Jointly Optimal Fair Data Collection and Trajectory Design Algorithms in UAV-Aided Cellular Networks*, IEEE WCNC 2021

⬦ C. Li, C. W. Tan, J. Li and S. Chen, *Fault-Tolerant Computation Meets Network Coding: Optimal Scheduling in Parallel Computing*, IEEE GLOBECOM 2021

⬦ S. W. Ho, L. Ling, C. W. Tan and R. W. Yeung, *Proving and Disproving Information Inequalities: Theory and Scalable Algorithms*, IEEE Transactions on Information Theory, Vol. 66, No. 9, pp. 5522-5536, 2020

⬦ S. Liu, C. Joe-Wong, J. Chen, C. Brinton, C. W. Tan and L. Zheng, *Economic Viability of a Virtual ISP*, IEEE/ACM Transactions on Networking, Vol. 28, No. 2, pp. 902-916, 2020

⬦ C. W. Tan, L. Ling, *Automated Reasoning by Convex Optimization: Proof Simplicity, Duality and Sparsity*, 54th Annual Conference on Information Sciences and Systems (CISS) 2020

⬦ L. Ling, C. W. Tan, S. W. Ho and R. W. Yeung, *Scalable Automated Proving of Information Theoretic Inequalities with Proximal Algorithms*, IEEE International Symposium on Information Theory, 2019

⬦ P. Yu, C. W. Tan and H. Fu, *Averting Cascading Failures in Networked Infrastructures: Poset-constrained Graph Algorithms*, IEEE Journal of Selected Topics in Signal Processing, Vol. 12, No. 4, 2018

⬦ C. Li, X. Guang, C. W. Tan and Raymond W. Yeung, *Fundamental Limits on A Class of Secure Asymmetric Multilevel Diversity Coding Systems*, IEEE Journal on Selected Areas in Communications, Vol. 36, No. 4, 2018

◇ L. Zheng, D. Cai and C. W. Tan, *Max-min Fairness Rate Control in Wireless Networks: Optimality and Algorithms by Perron-Frobenius Theory*, IEEE Transactions on Mobile Computing, Vol. 17, No. 1, pp.127-140, 2018

◇ D. Li, X. Guang, Z. Zhou, C. Li, C. W. Tan, *Hierarchical Performance Analysis on Random Linear Network Coding*, IEEE Transactions on Communications, Vol. 66, No. 5, pp. 2009-2021, 2018

◇ L. Ling and C. W. Tan, *Human-assisted Computation for Auto-grading*, ICDM Workshop on Machine Learning for Education, 2018

◇ L. Ling and C. W. Tan, *Pilot Study on Optimal Task Scheduling in Learning*, ACM Learning at Scale, 2018

◇ C. Kuo, C. N. Hang, P. Yu and C. W. Tan, *Parallel Counting of Triangles in Large Graphs: Pruning and Hierarchical Clustering Algorithms*, IEEE High Performance Extreme Computing Conference MIT-Amazon Graph Challenge (honorable mention), 2018

◇ P. Yu, C. W. Tan and H. Fu, *Graph Algorithms for Preventing Cascading Failures in Networks*, 52nd CISS, 2018

◇ L. Zheng, C. Joe-Wong, J. Chen, C. G. Brinton, C. W. Tan, M. Chiang, *Economic viability of a virtual ISP*, IEEE INFOCOM 2017

◇ X. Zhai, C. W. Tan, *Rate-Constrained Energy Minimization in Networks with Multiple Mobile Network Operator Access*, IEEE GLOBECOM 2017

◇ C. Li, X. Guang, C. W. Tan, R. W. Yeung, *On secure asymmetric multilevel diversity coding systems*, IEEE ISIT 2017

◇ P. Yu, C. W. Tan and H. Fu, *Rumor Source Detection in Finite Graphs with Boundary Effects by Message Passing Algorithms*, IEEE/ACM ASONAM, 2017

◇ P. Yu, C. W. Tan and H. Fu, *Rumor Source Detection in Unicyclic Graphs*, IEEE ITW 2017

◇ C. Li, F. Ye, X. Guang, Z. Zhou, C. W. Tan, R. W. Yeung, *On independent distributed source coding problems with exact repair*, IEEE ITW 2017

◇ L. Zheng, J. Chen, C. Joe-Wong, C. W. Tan, M. Chiang, *An economic analysis of wireless network infrastructure sharing*, IEEE WiOpt 2017

◇ L. Zheng, C. Joe-Wong, C. W. Tan, S. Ha, M. Chiang, *Customized Data Plans for Mobile Users: Feasibility and Benefits of Data Trading*, IEEE Journal on Selected Areas in Communications, Vol. 35, No. 4, 2017

◇ F. Wong, C. W. Tan, S. Sen and M. Chiang, *Quantifying Political Leaning from Tweets, Retweets and Retweeters*, IEEE Transactions on Knowledge and Data Engineering, Vol. 28, No. 8, 2016

◇ L. Zheng, Y. W. Hong, C. W. Tan, C. L. Hsieh and C. H. Lee, *Wireless Max-min Utility Fairness with General Monotonic Constraints by Perron-Frobenius Theory*, IEEE Transactions on Information Theory, Vol. 62, No. 12, 2016

◇ C. W. Tan, *Optimal Power Control in Rayleigh-fading Heterogeneous Wireless Networks*, IEEE/ACM Transactions on Networking, Vol. 24, No. 2, 2016

◇ Y. Gao, C. W. Tan, Y. Huang, Z. Zeng, P. R. Kumar, *Characterization and Optimization of Delay Guarantees for Real-Time Multimedia Traffic Flows in IEEE 802.11 WLANs*, IEEE Transactions on Mobile Computing, Vol. 15, No. 5, pp. 1090-1104, 2016

◇ Y. Bi, C. W. Tan, A. Tang, *Network utility maximization with path cardinality constraints*, IEEE INFOCOM 2016

◇ L. Zheng, C. Joe-Wong, C. G. Brinton, C. W. Tan, S. Ha, M. Chiang, *On the Viability of a Cloud Virtual Service Provider*, ACM SIGMETRICS 2016

⋄ C. W. Tan, P. Yu, C. Lai, W. Zhang and H. Fu, *Optimal Detection of Influential Spreaders in Online Social Networks*, 50th Annual Conference on Information Sciences and Systems (CISS) 2016

⋄ C. W. Tan, *Wireless Network Optimization by Perron-Frobenius Theory*, Now Publishers, Foundations and Trends in Networking, Vol. 9, No. 2-3, 2015

⋄ L. Zheng, C. Joe-Wong, C. W. Tan, M. Chiang and X. Wang, *How to Bid the Cloud?*, Proc. of ACM SIGCOMM 2015

⋄ L. Zheng, C. Joe-Wong, C. W. Tan, S. Ha, M. Chiang, *Secondary markets for mobile data: Feasibility and benefits of traded data plans*, IEEE INFOCOM 2015

⋄ L. Zheng and C. W. Tan, *A Probabilistic Characterization of the Rumor Graph Boundary in Rumor Source Detection*, IEEE Digital Signal Processing 2015

⋄ Z. Wang, W. Zhang, C. W. Tan, *On inferring rumor source for SIS model under multiple observations*, IEEE Digital Signal Processing 2015

⋄ Z. Wang, W. Dong, W. Zhang and C. W. Tan, *Rooting out Rumor Sources in Online Social Networks: The Value of Diversity from Multiple Observations*, IEEE Journal of Selected Topics in Signal Processing, Vol. 9, No. 4, 2015

⋄ Y. Li, M. Sheng, C. W. Tan, Y. Zhang, Y. Sun, X. Wang, Y. Shi, J. Li, *Energy-Efficient Subcarrier Assignment and Power Allocation in OFDMA Systems With Max-Min Fairness Guarantees*, IEEE Transactions on Communications, Vol. 63, No. 9, pp. 3183-3195, 2015

⋄ C. W. Tan, D. W. H. Cai and Lou, *Resistive Network Optimal Power Flow: Uniqueness and Algorithms*, IEEE Transactions on Power Systems, Vol. 30, No. 1, pp. 263-273, 2015

⋄ X Lou, H. Yao, C. W. Tan, J. Wang, *VANDER: Efficient Cooperative Watchdog Monitoring for Lossy Wireless Network Coding*, IEEE Transactions on Vehicular Technology, Vol. 64, No. 2, pp. 702-713, 2015

⋄ Z. Wang, W. Dong, W. Zhang and C. W. Tan, *Rumor Source Detection with Multiple Observations: Fundamental Limits and Algorithms*, Proc. of ACM SIGMETRICS 2014

⋄ Y.-W. Peter Hong, C. W. Tan, L. Zheng, C.-L. Hsieh, C.-H. Lee, *A unified framework for wireless max-min utility optimization with general monotonic constraints*, IEEE INFOCOM 2014

⋄ C. W. Tan, *Wireless network optimization by Perron-Frobenius theory*, 48th Annual Conference on Information Sciences and Systems (CISS) 2014

⋄ S. W. Ho, C. W. Tan and R. W. Yeung, *Proving and Disproving Information Inequalities*, IEEE International Symposium on Information Theory, 2014

⋄ C. W. Tan, S. W. Ho, S. Lint, R. W. Yeung, *Finding the capacity of next-generation networks by linear programming*, IEEE ICCS 2014

⋄ L. Zheng, C. W. Tan, *Smart spectrum access algorithms in mobile TV white space networks for utility maximization*, ACM MOBICOM Workshop 2014

⋄ Y. Chen, J. Zhang, X. Wang, X. Tian, W. Wu, F. Wu, C. W. Tan, *Secrecy capacity scaling of large-scale cognitive networks*, ACM MOBIHOC 2014

⋄ L. Zheng and C. W. Tan, *Maximizing Sum Rates in Cognitive Radio Networks: Convex Relaxation and Global Optimization Algorithms*, IEEE Journal on Selected Areas in Communications, Vol. 32, No. 3, 2014

⋄ X. Zhai, L. Zheng and C. W. Tan, *Energy-Infeasibility Tradeoff in Cognitive Radio Networks: Price-Driven Spectrum Access Algorithms*, IEEE Journal on Selected Areas in Communications, Vol. 32, No. 3, pp. 528-538, 2014

⋄ L. Zheng and C. W. Tan, *Optimal Algorithms in Wireless Utility Maximization: Proportional Fairness Decomposition and Nonlinear Perron-Frobenius Theory Framework*, IEEE Transactions on Wireless Communications, Vol. 13, No. 4, pp. 2086-2095, 2014

⋄ N. Chen, C. W. Tan and T. Quek, *Electric Vehicle Charging in Smart Grid: Optimality and Valley-Filling Algorithms*, IEEE Journal of Selected Topics in Signal Processing, Vol. 8, No. 6, 2014

⋄ X Lou, C. W. Tan, *Optimization Decomposition of Resistive Power Networks With Energy Storage*, IEEE Journal on Selected Areas in Communications, Vol. 32, No. 7, pp. 1371-1385, 2014

⋄ W. Dong, W. Zhang and C. W. Tan, *Rooting out the Rumor Culprit from Suspects*, Proc. of IEEE Intl. Symp. on Information Theory, 2013

⋄ F. M. F. Wong, C. W. Tan, S. Sen and M. Chiang, *Quantifying Political Leaning from Tweets and Retweets*, Seventh International AAAI Conference on Weblogs and Social Media (ICWSM), 2013

⋄ L. Zheng and C. W. Tan, *Cognitive Radio Network Duality and Algorithms for Utility Maximization*, IEEE Journal on Selected Areas in Communications, Vol. 31, No. 3, 2013

⋄ C. W. Tan, M. Chiang and R. Srikant, *Fast Algorithms and Performance Bounds for Sum Rate Maximization in Wireless Networks*, IEEE/ACM Transactions on Networking, Vol. 21, No. 3, 2013

⋄ Y. Zhao, C. W. Tan, A. S. Avestimehr, S. N. Diggavi and G. J. Pottie, *On the Maximum Achievable Sum-rate with Successive Decoding in Interference Channels*, IEEE Transactions on Information Theory, Vol. 58, No. 6, 2012

⋄ L. Yang, H. Kim, J. Zhang, M. Chiang and C. W. Tan, *Pricing-based Decentralized Spectrum Access Control in Cognitive Radio Networks*, IEEE/ACM Transactions on Networking, Vol. 21, No. 2, pp. 522-535, 2013

⋄ Y. Huang, C. W. Tan, B. D. Rao, *Joint Beamforming and Power Control in Coordinated Multicell: Max-Min Duality, Effective Network and Large System Transition*, IEEE Transactions on Wireless Communications, Vol. 12, No. 6, pp: 2730-2742, 2013

⋄ Y. Huang, C. W. Tan, B. D. Rao, *Efficient SINR fairness algorithm for large distributed multiple-antenna networks*, IEEE ICASSP 2013

⋄ Y. Huang, C. W. Tan, B. D. Rao, *Outage balancing in multiuser MISO networks: Network duality and algorithms* IEEE GLOBECOM 2012

⋄ Y. Huang, C. W. Tan, B. D. Rao, *Cooperative beamforming in multiuser MIMO networks: Fast SINR fairness algorithms*, IEEE GLOBECOM 2012

⋄ D. W. Cai, C. W. Tan, S. H. Low, *Optimal max-min fairness rate control in wireless networks: Perron-Frobenius characterization and algorithms*, IEEE INFOCOM 2012

⋄ S. Sorooshyari, C. W. Tan and M. Chiang, *Power Control for Cognitive Radio Networks: Axioms, Algorithms, and Analysis*, IEEE/ACM Transactions on Networking, Vol. 20, No. 3, pp. 878-891, 2012

⋄ L. Yang, H. Kim, J. Zhang, M. Chiang, C. W. Tan, *Pricing-based spectrum access control in cognitive radio networks with random access*, IEEE INFOCOM 2011

⋄ C. W. Tan, *Optimal power control in Rayleigh-fading heterogeneous networks*, IEEE INFOCOM 2011

⋄ Y. Gao, C. W. Tan, Y. Huang, Z. Zeng, P. R. Kumar, *Feasibility and optimization of delay guarantees for non-homogeneous flows in IEEE 802.11 WLANs*, IEEE INFOCOM 2011

⋄ C. W. Tan, S. Friedland and S. H. Low, *Nonnegative Matrix Inequalities and Their Application to Nonconvex Power Control Optimization*, SIAM Journal on Matrix Analysis and Applications, Vol. 32, No. 3, 2011

⋄ C. W. Tan, S. Friedland and S. H. Low, *Spectrum Management in Multiuser Cognitive Wireless Networks: Optimality and Algorithm*, IEEE Journal on Selected Areas in Communications, Vol. 29, No. 2, 2011

⋄ M. Wang, C. W. Tan, W. Xu and A. Tang, *Cost of Not Splitting in Routing: Characterization and Estimation*, IEEE/ACM Transactions on Networking, Vol. 19, No. 6, 2011

⋄ S. Sorooshyari, C. W. Tan, H. Vincent Poor, *On Maximum-Likelihood SINR Estimation of MPSK in a Multiuser Fading Channel*, IEEE Transactions on Vehicular Technology, Vol. 59, No. 8, pp. 4175-4181, 2010

⋄ C. W. Tan, D. P. Palomar and M. Chiang, *Energy-Robustness Tradeoff in Cellular Network Power Control*, IEEE/ACM Transactions on Networking, Vol. 17, No. 3, 2009

⋄ C. W. Tan and A. R. Calderbank, *Multiuser Detection of Alamouti Signals*, IEEE Transactions on Communications, Vol. 57, No. 7, 2009

⋄ M. Wang, C. W. Tan, A. Tang, S. H. Low, *How Bad is Single-Path Routing*, IEEE GLOBE-COM 2009

⋄ C. W. Tan, M. Chiang, R. Srikant, *Fast Algorithms and Performance Bounds for Sum Rate Maximization in Wireless Networks*, IEEE INFOCOM 2009

⋄ C. W. Tan, M. Chiang, R. Srikant, *Maximizing sum rate and minimizing MSE on multiuser downlink: Optimality, fast algorithms and equivalence via max-min SIR*, IEEE ISIT 2009

⋄ C. W. Tan, D.-M. Chiu, C.-S. Lui, K.-Y. Yau, *A Distributed Throttling Approach for Handling High Bandwidth Aggregates*, IEEE Transactions on Parallel Distributed Systems, Vol. 18, No. 7, pp. 983-995, 2007

⋄ M. Chiang, C. W. Tan, D. P. Palomar, D. O'Neill, D. Julian, *Power Control By Geometric Programming*, IEEE Transactions on Wireless Communications, Vol. 6, No. 7, pp. 2640-2651, 2007

⋄ C. W. Tan, D. P. Palomar, M. Chiang, *Exploiting Hidden Convexity For Flexible And Robust Resource Allocation In Cellular Networks*, IEEE INFOCOM 2007

⋄ C. W. Tan, G. Mohan, C.-S. Lui, *Achieving Multi-Class Service Differentiation in WDM Optical Burst Switching Networks: A Probabilistic Preemptive Burst Segmentation Scheme*, IEEE Journal on Selected Areas in Communications, Vol. 24(S-12), pp. 106-119, 2006

⋄ C. W. Tan, D. P. Palomar, M. Chiang, *Distributed Optimization of Coupled Systems With Applications to Network Utility Maximization*, IEEE ICASSP 2006

⋄ C. W. Tan, D. P. Palomar, M. Chiang, *Solving nonconvex power control problems in wireless networks: low SIR regime and distributed algorithms*, IEEE GLOBECOM 2005

MONOGRAPH AND EDITED BOOKS

⋄ C. W. Tan and P. D. Yu, *Contagion Source Detection in Epidemic and Infodemic Outbreaks: Mathematical Analysis and Network Algorithms*, Now Publishers, Foundations and Trends in Networking, ISBN: 978-1-63828-250-1, 2023.

⋄ C. W. Tan (Ed.), *Online Social Networks: Perspectives, Applications and Developments*, Nova Science Publishers, 2020.

⋄ C. W. Tan, *Wireless Network Optimization by Perron-Frobenius Theory*, Now Publishers, Foundations and Trends in Networking, ISBN: 978-1-68083-050-7, 2015.

⋄ C. W. Tan (Ed.), *Cognitive Radio Networks: Performance, Applications and Technology*, Nova Science Publishers, 2018.

⋄ M. Chiang, P. Hande, T. Lan and C. W. Tan, *Power Control in Wireless Cellular Networks*, Now Publishers, Foundations and Trends in Networking, ISBN: 978-1601981363, 2007.

RECENT TALK AND INVITED TUTORIAL

⋄ IEEE International Conference on Artificial Intelligence Tutorial "Large Language Models and Code Copilots for AI-Assisted Programming", May 2025

⋄ 2024 Reunion Workshop on Optimization & Control of Networks: from Theory to Practice, Caltech Netlab, California Institute of Technology, "Large-Scale Optimization of Convex-Concave Games in Networks", May 2024

⋄ IEEE Information Theory Workshop Tutorial "Unraveling Contagion Origins: Mathematical Analysis, Network Algorithms and Applications to Epidemics and Infodemics", November 2024

⋄ Keynote for 2024 International Conference on Artificial Intelligence and Machine Learning Research (CAIMLR), "Generative Agents in AI-driven Networks", September 2024

⋄ Keynote for 2022 IEEE 6th International Symposium on Telecommunication Technologies, "Perspectives on Artificial Intelligence for Sustainable Networking: From 5G to Blockchains", November 2022

⋄ Information Inequalities: Facets of Entropy and Automated Reasoning by Optimization, (with R. W. Yeung and S. W. Ho), IEEE International Symposium on Information Theory, Jun 2022

⋄ 2022 IEEE Malaysia Communications Society & Vehicular Technology Society ComSoc School Series, "Artificial Intelligence: Past, Present and Future", June 2022

⋄ Healthcare Big Data Analytics for COVID-19 Challenges: Digital Contact Tracing and Infodemic Management, IEEE Conference on Big Data, Dec 2021

⋄ 5. 4th EAI International Conference on Machine Learning and Intelligent Communications Keynote Speaker, "Network Centrality as Statistical Inference in Large Networks," August 2019

⋄ Artificial Intelligence at Scale: Automated Reasoning by Convex Optimization
Princeton University (2019), UCLA (2018).

⋄ Network Centrality as Statistical Inference in Large Networks
INFORMS International Conference 2018, University of Notre Dame Workshop on Big Data Challenges for Predictive Modeling of Complex Systems 2018, 2018 Smart Grid Seminar at California Institute of Technology, 2018 Institute for Pure and Applied Mathematics (IPAM) Seminar Series.

⋄ Statistical Inference for Cyber-Security in Networks
IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM) Conference Tutorial 2017

⋄ Statistical Inference for Cyber-Security in Networks
International Conference on Acoustics, Speech, and Signal Processing (ICASSP) in 2016

PROFESSIONAL SERVICES

⋄ Publication Chair, IEEE Conference on Artificial Intelligence (CAI) 2025

⋄ Chair, Symposium of AI-enabled Networks, 2025 IEEE Global Communications Conference (IEEE GLOBECOM)

⋄ Extended Steering Committee Member, ACM Learning at Scale (2022 - present)

⋄ Editor, IEEE Transactions on Cognitive Communications and Networking (2022 - present)

⋄ Editor, BMC Archives of Public Health, Health Information Systems (2021 - present)

⋄ Editor, IEEE/ACM Transactions on Networking (2016-2020)

⋄ Editor, IEEE Transactions on Communications (2012-2018)

⋄ Organizer, Conference on Information Sciences and Systems (CISS) Special Session on Optimization and its Applications in Artificial Intelligence, Princeton NJ, 2020, 2022

⋄ Technical Program Committee Member, ACM SIGMETRICS (2021,2020), ACM MobiHoc (2019,2020), IEEE INFOCOM

⋄ Technical Program Committee Co-Chair, Modeling and Optimization in Mobile, Ad-Hoc and Wireless Networks (WiOpt) 2019

PATENTS GRANTED

⋄ Method and apparatus for matching buyers with sellers in a marketplace to facilitate trade, United States Patent No. US11030690B2, Inventor: L. Zheng and C. W. Tan, Filed 31 August 2015, Granted 8th June 2021.