

Weiqiang Sun

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SUMMARY STATEMENT

Dr. Weiqiang Sun is currently a professor in the department of electronic engineering in Shanghai Jiao Tong University (SJTU). Dr. Sun is actively involved in the research of high speed networks, network control and management, and network applications. He has about 60 publications in peer reviewed journals and conferences. He was involved in the standardization of Generalized Multi-Protocol Label Switching (GMPLS) performance measurement in IETF, and is the co-editor of RFC 6777 and RFC 5814. He has served as an invited speaker on many international conferences and is member of Technical Program Committee of COIN, GreenTouch, PGC and organizer of the Sino-Korea Workshop on IPTV and NGN (2007-2010). He is the co-chair of IEEE HPSR 2017.

Dr. Sun gives a course in digital design for the first year undergraduate students in the school of Electronic, Information and Electrical Engineering (SEIEE).

Dr. Sun founded the "SJTU-Health" project, an online health management platform that serves the SJTU community. Since then, Dr. Sun is interested in health informatics. The "SJTU-Health" project has over 10,000 registered users and is actively providing online services to faculties, alumni and students.

Dr. Weiqiang is a senior member of IEEE and life member of OSA.

EMPLOYMENT HISTORY

Dec. 2014 – Current,
Professor, Department of Electronic Engineering, SJTU
Dec. 2013 – Dec. 2014
Visiting scholar (MIT LGO and LIDS), MIT
Dec. 2008 – Dec. 2014
Associate Professor, Department of Electronic Engineering, SJTU
Sep. 2008 – Dec. 2008
Visiting scholar (MIT LGO), MIT
Jun. 2004 – Dec. 2008
Assistant Professor, Department of Electronic Engineering, SJTU

EDUCATION HISTORY

- University of Science and Technology of China (USTC), Hefei, China
Ph.D, Communications and Information Systems (With honors)
Date of graduate: Jun. 2004
- University of Science and Technology of China (USTC), Hefei, China
B. Sci., Electronic Engineering (With honors), in the Special Class for the Gifted Young (SCGY)

Date of graduate: Jun. 1999

AWARDS AND FELLOWSHIPS

- Rising-Star Scholar, Shanghai Science and Technology Committee, Jun. 2009
 - Chenxing Young Scholar, SJTU, Jun. 2008
 - Graduate of excellence, USTC, Jul. 2004
 - Samsung Scholarship, USTC, Jul. 2003
 - Microsoft Fellowship, Microsoft Research Asia (MSRA) , Sep. 2003
- "Awarded because of your academic achievements..."*
- Yin-Gang Peng Scholarship, Chinese Academy of Science (CAS), Jul. 2001
 - Award of Excellence for the undergraduate students, USTC, 1994~1999 (annually)

ONGOING GRANT SUPPORT

- MARCONI: Models and Algorithms in a Compute and Optical Network Converged Infrastructure, NSFC key project, 2024.1 - 2028.12

PAST PROJECTS

- "Control Plane Performance of Optical Transport Networks", Fok Ying Tung Education Foundation, PI, 2012-2014
- "End to End Bandwidth Provisioning in Flexible Grid Optical Networks", National Natural Science Foundation of China (NSFC), PI, 2013-2016
- "Design and Implementation of an Energy Efficient Hybrid Optical Switching System", National High-tech program (863), PI, 2012-2014
- "GMPLS performance measurement and modeling," Shanghai Science and Technology Committee (STCSM), PI, 2009-2011
- "KOREN-CERNET based IPTV Testbed between Korea and China," National Natural Science Foundation of China (NSFC) and Korea Science and Engineering Foundation (KOSEF), PI, 2007-2010
- "QoE in IPTV systems," National Natural Science Foundation of China (NSFC), PI, 2007-2010
- "Digital TV distribution in overlay networks," National High-tech program (863), PI, 2005-2006
- "Testing and evaluation of the next generation dynamic optical networks," National High-tech program (863), Co-PI, 2006-2009

SELECTED PUBLICATIONS AND CONTRIBUTIONS

- Yu, Jia, Mengjun Ding, and Weiqiang Sun. "Dynamic-n-Static Multiplex Graph Representation Learning for Improved Link Prediction." *IEEE Transactions on Neural Networks and Learning Systems* (2026).
- Ding, Zhihua, et al. "SpecSplishing: An effective frequency-domain time series representation with spectrum splitting and shifting." *Neurocomputing* (2026): 133231.
- Chen, Zhen, et al. "Ratio-Enhanced Feature Interaction for Few-Shot User Authentication Using Running Data in IoT Wearables." *IEEE Internet of Things Journal* (2026).

- Ding, Mengjun, Jia Yu, Danillo Barros de Souza, Serafim Rodrigues, Mathieu Desroches, Chunbo Li, and Weiqiang Sun. "Growing order-heterogeneous simplicial complexes." *Chaos: An Interdisciplinary Journal of Nonlinear Science* 36, no. 1 (2026).
- Chen, Baojun, Niangen Ye, Shuai Zhang, Jiawen Zhu, Weiqiang Sun, and Weisheng Hu. "Flexible Inter-and Intra-Switching Plane Resource Allocation in Data Center Networks." *IEEE Transactions on Networking* 34 (2025): 1789-1803.
- Zhu, Jiawen, Baojun Chen, Weiqiang Sun, Tong Ye, and Weisheng Hu. "Optimal placement of multi-wavelength integrated tunable transmitters in reconfigurable optical data center interconnection networks with multi-hop routing." *Journal of Optical Communications and Networking* 17, no. 8 (2025): 659-675.
- Shi, K., Ding, Z., Chen, Z. et al. A multi-scale time series forecasting framework with temporal hierarchical information fusion and reconciliation. *Data Min Knowl Disc* 39, 32 (2025). <https://doi.org/10.1007/s10618-025-01103-9>
- Zhang S, Chen B, Sun W, Hu W. Modeling Resource Scheduling in Optical Switching DCNs under Bursty and Skewed Traffic. *IEEE Transactions on Cloud Computing*. 2025 Apr 16.
- Chen B, Zhang S, Zhu J, Sun W, Hu W. pVarband: Efficient and Performance Guaranteed Scheduling With Variable Bandwidth in IRS-Assisted FSO Systems in DCNs. *IEEE Transactions on Networking*. 2025 Apr 15.
- Yu J, Ding M, Sun W, Hu W, Wang H. Understanding the Human Behavior of Participation in Community Sports Organizations. *IEEE Transactions on Computational Social Systems*. 2025 Feb 3.
- Ding M, Yu J, Sun W. Growing simplicial complex with face dimension selection and preferential attachment. *Chaos: An Interdisciplinary Journal of Nonlinear Science*. 2024 Oct 1;34(10).
- Chen Z, Shi K, Sun W. Step Count Print: A Physical Activity-Based Biometric Identifier For User Identification and Authentication. *IEEE Transactions on Biometrics, Behavior, and Identity Science*. 2024 Sep 24.
- Shi, K., Chen, Z., Sun, W., & Hu, W. (2024). Measuring regularity of human physical activities with entropy models. *Journal of Big Data*, 11(1), 37.
- Zhang, S., Shao, J., Chen, B., Sun, W., & Hu, W. (2023). Interruptible Scheduling of Partially Re-configurable Optical Switching in Data Center Networks. *Journal of Lightwave Technology*.
- Chen, B., Zhu, J., Zhang, S., Sun, W., & Hu, W. (2023). Performances of Traffic Offloading in Data Center Networks With Steerable Free-Space Optical Communications. *IEEE/ACM Transactions on Networking*.
- R. Liu, W. Sun and W. Hu, "Placement of High Availability Geo-Distributed Data Centers in Emerging Economies," in *IEEE Transactions on Cloud Computing*, vol. 11, no. 3, pp. 3274-3288, 1 July-Sept. 2023, doi: 10.1109/TCC.2023.3280983.
- S. Yue, X. Lin, W. Sun and W. Hu, "Modeling Sparse Store-and-Forward Bulk Data Transfers in Inter-Datcenter Networks With Multiple Congested Links," in *IEEE Transactions on Cloud Computing*, vol. 11, no. 3, pp. 2725-2738, 1 July-Sept. 2023, doi: 10.1109/TCC.2022.3225977.

- Keqin Shi, Zhen Chen, Xuejing Li, Zhifei Xiao, Weiqiang Sun, and Weisheng Hu. 2023. Inferring Activity Patterns from Sparse Step Counts Data with Recurrent Neural Networks. *ACM Trans. Comput. Healthcare* 4, 1, Article 4 (January 2023), 20 pages. <https://doi.org/10.1145/3560468>
- Junyi Shao, Shuai Zhang, Weiqiang Sun, and Weisheng Hu, "Dynamic frequency slot allocation on IP-over-EON access links with multiple-type and time-varying traffic," *J. Opt. Commun. Netw.* 15, 304-317 (2023)
- J. Yu, M. Ding, Q. Wang, W. Sun and W. Hu, "Community Sports Organization Development From a Social Network Evolution Perspective— Structures, Stages, and Stimulus," in *IEEE Transactions on Computational Social Systems*, vol. 10, no. 3, pp. 878-889, June 2023, doi: 10.1109/TCSS.2021.3135809.
- Junyi Shao, Shuai Zhang, Weiqiang Sun, and Weisheng Hu, "Dimensioning access link capacity for time-varying traffic with mixed packet streams and circuit connections," *J. Opt. Commun. Netw.* 13, 276-288 (2021)
- Qian Liu, Weiqiang Sun, Shengnan Yue and Weisheng Hu, A Routing Scheme for Bulk Data Transfers in Multi -domain OCS Networks with Assistive Storage, *IEEE ICC 2019, Shanghai, China*
- Xiao Lin, Weiqiang Sun, Shengnan Yue and Weisheng Hu, Design of an SnF Scheduling Method for Bulk Data Transfers over Inter-Datacenter WANs, *IEEE HPSR 2019, Xi'an, China*