

WenWei Liao

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Current Position

Senior Research Associate

-Cooperative Institute for Research in Environmental Sciences - University of Colorado Boulder

Senior Research Associate

-Global Systems Laboratory - National Oceanic and Atmospheric Administration (NOAA)

Education

Doctor of Philosophy

-National Taiwan Normal University, Taipei, Taiwan

Master of Computer Education

-National Taiwan Normal University, Taipei, Taiwan

Professional Experience

Senior Member

- Institute of Electrical and Electronics Engineers (IEEE)

Technical Program Committee

- International Conference on Algorithms, Computing and Systems, Berlin Germany

Certified Engineer

- Microsoft Corporation

Committee

- International Conference on Knowledge Community 2010~ 2014

Assistant Professor

- Taiwan Chinese Culture University 2009~ 2015

Assistant Research Fellow

- Taiwan Central Weather Bureau 2003 ~2009

Teacher

- National San-Chung Senior High School 2002 ~ 2003

Honors, Awards, Scholarships

1. *NOAA/GSD Director's Directed Research Fund 2016*

BRIEF DESCRIPTION:

Selection of GSD Core Software and System Foundation for Next Generation Decision Support and Instant Insight Systems

2. *Governor's Award for High-Impact Research 2017*

BRIEF DESCRIPTION:

Science On a Sphere, and the flat-screen version SOS Explorer, are display systems that help explain complex environmental processes to the public in an intuitive and captivating way.

PUBLIATION

GOVERNMENT REPORT

Liao, W. W., Kalluri S., Zhang, J., Xin, L. Y., Nikefield, D., Tallapragada V., Foster M. & Titov, V. (2019). *NOAA Final Report for NOAA-CWB Implementing Arrangement #31 Development of a Hazardous Weather Monitoring and Forecasting System*. National Oceanic and Atmospheric Administration, Published.

Liao, W. W., Kalluri S., Zhang, J., Xin, L. Y., Nikefield, D., Tallapragada V. & Foster M. (2018). *NOAA Final Report for NOAA-CWB Implementing Arrangement #30 Development of a Hazardous Weather Monitoring and Forecasting System*. National Oceanic and Atmospheric Administration, Published.

Moeng, F. T., **Liao, W. W.**, Weng, F. Z., Zhang, J., Xin, L. Y., Wakefield, J., Tallapragada V. & Foster M. (2017). *NOAA Final Report for NOAA-CWB Implementing Arrangement #29 Development of a Hazardous Weather Monitoring and Forecasting System*. National Oceanic and Atmospheric Administration, Published.

Moeng, F. T., **Liao, W. W.**, Weng, F. Z., Zhang, J., Xin, L. Y., Wakefield, J., Tallapragada V. (2016). *NOAA Final Report for NOAA-CWB Implementing Arrangement #28 Development of a Hazardous Weather Monitoring and Forecasting System*. National Oceanic and Atmospheric Administration, Published.

JOURNAL PAPER

Lu, T., Lee, Y. J., & **Liao, W. W.** (2019). Towards Denial-of-Service Memory Vulnerabilities. *Journal of Software*, 14(9), 423-436. doi: 10.17706/jsw.14.9.423-436

Sun, Q., & **Liao, W. W.** (2016). Depression among Middle Aged and Elderly People in China. *Asian Journal of Humanities and Social Studies*, 4(2), 151-160.

Cheng, H. C., **Liao, W. W.** (2014). Blog Interface Producing Mechanism in Learning Management System. *Journal of Software*, 9 (3), 605-612.

Liao, W. W., Ho, R. G., Yen, Y. C. & Cheng, H. C. (2012). 4PL IRT Model as a Robust Estimation Method against Aberrant Response. *Journal of Social Behavior and Personality*, 40(10), 1679-1694.

Yen, Y. C., Ho, R. G., **Liao, W. W.** & Chen, L. J. (2012). An Empirical Evaluation of Slip Correction in the Four Parameter Logistic Model with Computerized Adaptive Testing. *Applied Psychological Measurement*, 36(2), 75-87.

Liao, W. W., Ho, R. G. (2012). Framework and Implementation of the Virtual Item Bank System. *Journal of Software*, 7(6), 1329-1337.

Cheng, H. C., **Liao, W. W.**, Chi, T. Y., Wei, S. Y. (2011). A Secure and Practical Key Management Mechanism for NFC Read-Write Mode, *Journal of Computational Information Systems*, 7(11), 3819-3828.

Yen, Y. C., Ho, R. G., **Liao, W. W.** & Chen, L. J. (2011). Reducing the Impact of Inappropriate Items on Reviewable Computerized Adaptive Testing. *Educational Technology & Society*, 15(2), 231-243.

Liao, W. W., Ho, R. G. & Yen, Y. C. (2011). Designing a Virtual Item Bank Based on the Techniques of Image Processing. *Turkish Online Journal of Educational Technology*, 10(4), 93106.

CONFERENCE PAPER

Huang, C. C., Hsu, C. C., Pon, Y. S. & **Liao, W. W.** (In publish). *A case study by using Python to implement data and dimensionality reduction*. 2021 IEEE International Conference on Consumer Electronics and Computer Engineering, GuangZhou China.

Huang, C. C., Hsu, C. C., Pon, Y. S. & **Liao, W. W.** (2020, Sep). *A case study for clustering characteristics evaluation and clustering dimension selection by using UCI news data*. 2020 4th International Conference on Algorithms, Computing and Systems (ICACS 2020) Berlin, Germany.

Liao, W. W., Hackathorn, E. J., & Wang, S. F. (2020, February). A Study of Applying a 3D Instructional Software of Popular Science (Science On a Sphere explorer) in Earth Science Education of an Elementary School. *IEEE/ICACT 2020, 22nd International Conference on Advanced Communication Technology*, 503-506. Phoenix Park, Korea.

Lee Y. J., **Liao, W. W.** & Chen K. N. (2019, December), *Intensity Estimation of Tropical Cyclone Satellite Images Using Random Walk With Restart*. Poster session presented at the 2019 AGU Fall meeting. San Francisco USA.

Chen, J. H., Chen, Y. J., Liu, P. Y., Juang, H. M., Kuo, H. C. & **Liao, W. W.** (2019, November). *Coupling RSM with CWBGFS for S2S forecast in CWB*. Poster session presented at the RSM2019 15th International RSM workshop. Tokyo Japan.

Chen, Y. J., Juang, H. M., Chen, J. H., Kuo, H. C., **Liao, W. W.** (2019 November). *Implementing NDSL into MSM*. Poster session presented at the RSM2019 15th International RSM workshop. Tokyo Japan.

Wu, T. Y., Juang, H. M., Liu, P. Y., Chen, Y. L., Lee, C. T., Chen J. H. & **Liao, W. W.** (2019, October). *Development and Result of TCWBIT*. Poster session presented at the 44th NOAA ANNUAL CLIMATE DIAGNOSTICS AND PREDICTION WORKSHOP, College Park, USA.

Chen, Y. L., Wu, T. Y., Liu, P. Y., Chen, J. H., Juang, H. M., **Liao, W. W.** (2019, October). *MJO forecast verification and diagnostics for CWB S2S models*. Poster session presented at the 44th NOAA ANNUAL CLIMATE DIAGNOSTICS AND PREDICTION WORKSHOP, College Park, USA.

Chang, H. L., Chen, Y. J., Chen M. S., Lee, C. T., Chen, J. H., Juang, H. M. & **Liao, W. W.** (2019, August). *An Introduction to Week-2 Temperature Extremes Forecast Guidance of Central Weather Bureau*. Poster session presented at the 8th NCEP Ensemble User Workshop. College Park, USA.

Lee. Y. J. & **Liao, W. W.** (2018, February). Ultimate performance of Wi-Fi access points with multiple interfaces: An application of software defined network. *IEEE/ICACT 2018, 20th International Conference on Advanced Communication Technology*, 590-594. Phoenix Park, Korea.

- Cheng, H. C. & **Liao, W. W.** (2013, February). A learning project to improve arts ability. Proceedings of 2013. *IEEE/ICACT 2013, 15th International Conference on Advanced Communication Technology: Smart Services with Internet of Things*, 1028-1031. Phoenix Park, Korea.
- Cheng, H. C. & **Liao, W. W.** (2012, February). Establishing a lifelong learning environment using IOT and learning analytics. *IEEE/ICACT 2012, 14th International Conference on Advanced Communication Technology: Smart Society Innovation through Mobile Internet*, 1178-1183. Phoenix Park, Korea.
- Lin, P. C., Cheng, H. C., **Liao, W. W.** & Yen, Y. C. (2011, January). A Study of the Mobile Technology Literacy Indicators in Taiwan. *The 2012 International Conference on Emerging Computation and Information Technologies for Education (ECICE 2012)*, 391-398. Hangzhou, China.
- Liao, W. W.** & Ho, R. G. (2011, September). The Study of Developing Spatial Ability by Applying Game-Based Learning. *6th international Conference on E-learning at Games, Edutainment 2011*, 158-162. Taipei Taiwan
- Liao, W. W.** & Ho, R. G. (2011, July). Applying Observational Learning in the Cloud Education System of Art Education in an Elementary School. *The 11th IEEE International Conference on Advanced Learning Technologies*, 131-135. Georgia, USA.
- Liao, W. W.**, Ho, R. G. (2011, February). Design a Computer Adaptive Cubic Enumeration Test based on Virtual Item Bank Theory. *IEEE/ICACT 2011, 13th International Conference on Advanced Communication Technology: Smart Service Innovation through Mobile Interactivity*, 1569-1573. Phoenix Park, Korea.
- Cheng, H. C., **Liao, W. W.** & Wei, S. Y. (2011, February). A Web2.0 imitation (copy a painting) learning project of art education via e-learning in Taiwan. *IEEE/ICACT 2011, 13th International Conference on Advanced Communication Technology: Smart Service Innovation through Mobile Interactivity*, 1574-1578. Phoenix Park, Korea.
- Cheng, H. C., **Liao, W. W.**, Chi, T. Y. & Wei, S. Y. (2011, February). A Secure and Practical Key Management Mechanism for NFC Read-Write Mode. *IEEE/ICACT 2011, 13th International Conference on Advanced Communication Technology: Smart Service Innovation through Mobile Interactivity*, 1095-1100. Phoenix Park, Korea.
- Liao, W. W.** & Ho, R. G. (2010, June). Designing a Virtual Item Bank Based on the Techniques of Image Processing. *2010 Globe Chinese Conference Computers in Education*, 644-650. Nanyang Technological University, Singapore.
- Cheng, H. C., **Liao, W. W.** & Heng, Y. C. (2010, February). Blog interface producing mechanism in e-Learning platform. *IEEE/ICACT 2010, 12th International Conference on Advanced Communication Technology: Smart Service Innovation through Mobile Interactivity*, 1544-1548. Phoenix Park, Korea.

INDUSTRY-ACADEMIA COOPERATION PROJECT

Agreement of the National Oceanic and Atmospheric Administration to assume the responsibilities of the designated representative of the American Institute in Taiwan under implementing arrangement #32 under the agreement for Technical Cooperation in Meteorology and Forecast Systems Development between the American Institute in Taiwan and the Taipei Economic and Cultural Representative Office in the United States

PI : WenWei Liao

Timeline : 2020/1~2024/12

National Central University - Cornell Multi-grid Coupled Tsunami Model – Storm Surge system development (4/4)

PI : Tsoren Wu , **CO-PI : WenWei Liao**

Timeline : 2020/01~2020/12

Agreement of the National Oceanic and Atmospheric Administration to assume the responsibilities of the designated representative of the American Institute in Taiwan under implementing arrangement #31 under the agreement for Technical Cooperation in Meteorology and Forecast Systems Development between the American Institute in Taiwan and the Taipei Economic and Cultural Representative Office in the United States

PI : WenWei Liao

Timeline : 2019/1~2019/12

Agreement of the National Oceanic and Atmospheric Administration to assume the responsibilities of the designated representative of the American Institute in Taiwan under implementing arrangement #30 under the agreement for Technical Cooperation in Meteorology and Forecast Systems Development between the American Institute in Taiwan and the Taipei Economic and Cultural Representative Office in the United States

PI : WenWei Liao

Timeline : 2018/1~2018/12

Agreement of the National Oceanic and Atmospheric Administration to assume the responsibilities of the designated representative of the American Institute in Taiwan under implementing arrangement #29 under the agreement for Technical Cooperation in Meteorology and Forecast Systems Development between the American Institute in Taiwan and the Taipei Economic and Cultural Representative Office in the United States

PI : Fanthune Moeng; **PM: WenWei Liao**

Timeline : 2017/1~2017/12

Agreement of the National Oceanic and Atmospheric Administration to assume the responsibilities of the designated representative of the American Institute in Taiwan under implementing arrangement #28 under the agreement for Technical Cooperation in Meteorology and Forecast Systems Development between the American Institute in Taiwan and the Taipei Economic and Cultural Representative Office in the United States

PI : Fanthune Moeng; **PM: WenWei Liao**

Timeline : 2016/1~2016/12