YUNCHUAN LIU

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https://yunchuanliu2023.github.io/

EDUCATION

University of Nevada,Reno *August 2017 - August 2022*
Doctor of Philosophy in Computer Science and Engineering.
Theses: Towards Automated Machine Learning on Imperfect Data for Situational Awareness in Power System

Shenzhen University, Guangdong, China *September 2009 - June 2012*
Master Degree of Science in Optics.
Theses: Circuit design of micro projector video processing system based on FPGA

Shenzhen University, Guangdong, China *September 2003 - July 2007*
Bachelor Degree of Science in Optical Information.
Theses: Thin film design of high reflection in infrared wave

EMPLOYMENT

Assistant Professor in Governors State University *August 2022 - Now*
Research Assistant in University of Nevada, Reno *August 2017 - August 2022*
Teaching Assistant in University of Nevada, Reno *August 2018 - August 2022*

RESEARCH INTEREST

Machine Learning, Data Mining, Embedded System, Power System, Interdisciplinary Research.

Some recently focused topics: Object Detection of Drone, Federated Learning and weakly supervised learning.

JOURNAL PAPERS

1) Haoyan Cheng, Mingyong Song, and Yunchuan Liu. Related Technological Density and Regional industrial Upgrading from Perspective of Product Space Theory: Evidence from China. Applied Economics (2024): 1-15.

2) Yunchuan Liu, Amir Ghasemkhani and Lei Yang. Drifting Streaming Peaks-over-Threshold Enhanced Self-evolving Neural Networks for Short-term Wind Farm Generation Forecast. Future Internet 15.1 (2023): 17.

3) Yunchuan Liu, Lei Yang, Amir Ghasemkhani, Hanif Livani,Virgilio A. Centeno, Pin-Yu Chen, Junshan Zhang, J. (2022). Robust Event Classification Using Imperfect Real-world PMU Data. IEEE Internet of Things Journal.

4) Amir Ghasemkhani, Iman Niazazari, Yunchuan Liu, Hanif Livani, Virgilio A. Centeno, Lei Yang. (2020). A regularized tensor completion approach for pmu data recovery. IEEE Transactions on Smart Grid, 12(2), 1519-1528.

5) Yunchuan Liu, Heng Li, Danni Chen, Hanben Niu. (2016). A Combined SOM/SVM Learning Algorithm for Vibration Recognition in Nanometer Imaging Systems. International Journal of Simulation–Systems, Science & Technology, 17(36).

6) Yunchuan Liu, Junshan Yang and Hanben Niu. (2015). A Study on Vibration Recognition of Nano-imaging System Based on Wavelet Analysis. The Open Automation and Control Systems Journal, 7(1).

7) Yunchuan Liu and Xiangdong Gong. (2013). Processing and Hardware Implementation of BT. 656 Digital Video Stream. Chinese Journal of Liquid Crystals and Displays, 28(2), 238-243.

8) Zuolin Cheng, Yunchuan Liu and Xiangdong Gong. (2012). Design of USB Transmission System for Micro projection Video Signal. Chinese Journal of Liquid Crystals and Display, 27(1), 81-86.

9) Yunchuan Liu, Xiangdong Gong, Wu Qingyang. (2011). SPI IP Core and Its Application in Microprojection System. Microcontroller and Embedded Systems, (2), 27-30.

CONFERENCE PAPERS

1) Mahmoud, Yunchuan Liu,Abraham Canafe and Lei Yang, Towards distributed learning of PMU data: A federated learning based event classification approach. 2023 IEEE Power & Energy Society General Meeting (PESGM). IEEE, 2023.

2) Yunchuan Liu and Lei Yang, Weakly supervised event classification using imperfect real-world PMU data with scarce labels. 2022 IEEE Power & Energy Society General Meeting (PESGM). IEEE, 2022. (Best Paper Award)

3) Amir Ghasemkhani, Yunchuan Liu and Lei Yang, Optimized Event Detection Framework for Synchrophasor Data. 2022 IEEE Power & Energy Society General Meeting (PESGM). IEEE, 2022.

4) Abraham Canafe, Yunchuan Liu, Lei Yang, Hanif Livani, DCCA Enhanced Forced Oscillation Frequency Detection Using Real-world PMU Data. In 2022 IEEE Texas Power and Energy Conference (TPEC) (pp. 1-6). IEEE. (REU project to mentor undergrad student work)

5) Yunchuan Liu, Amir Ghasemkhani, Lei Yang, Jun Zhao, Junshan Zhang, and Vijay Vittal, Seasonal self-evolving neural networks based short-term wind farm generation forecast. In 2020 IEEE International Conference on Communications, Control, and Computing Technologies for Smart Grids (SmartGridComm) (pp. 1-6). IEEE.

6) Iman Niazazari, Yunchuan Liu, Amir Ghasenikhani, Shuchismita Biswas, Hanif Livani, Lei Yang, Virgilio A. Centeno. (2021, February). Pmu-data-driven event classification in power transmission grids. In 2021 IEEE Power Energy Society Innovative Smart Grid Technologies Conference (ISGT) (pp. 1-5). IEEE.

7) Iman Niazazari, Hanif Livani, Amir Ghasemkhani, Yunchuan Liu, Lei Yang. (2021, April). Event cause analysis in distribution networks using synchro waveform measurements. In 2020 52nd North American Power Symposium (NAPS) (pp. 1-5). IEEE.

8) Amir Ghasemkhani, Yunchuan Liu, Lei Yang. (2021, February). Low-rank Tensor Completion for PMU Data Recovery. In 2021 IEEE Power Energy Society Innovative Smart Grid Technologies Conference (ISGT) (pp. 1-5). IEEE.

9) Yunchuan Liu, Shuang Li, and Zeyang Xia. (2015, December). Path planning efficiency maximization for ball-picking robot using machine learning algorithm. In 2015 International Conference on Intelligent Transportation, Big Data and Smart City (pp. 551-555). IEEE.

10) Yunchuan Liu, Yingdong Huo and Hanben Niu. (2015, December). A method for reducing the sidelobes in superoscillation imaging. In MIPPR 2015: Multispectral Image Acquisition, Processing, and Analysis (Vol. 9811, pp. 76-81). SPIE.

TEACHING

1) CPSC-6780 Big Data Processing and Analytics (22 Fall,24 Fall)

2) CPSC-6790 Data Mining and Business Intelligence (23 Spring)

3) CPSC-8810 Formal Languages and Automata (24 Spring - 25 Spring)

4) CPSC-8845 Advanced Database Concepts (22 Fall - 24 Fall)

5) CPSC-8985 Grad Seminar(22 Fall - 24 Fall)

PRESENTATIONS

1) IEEE International Conference on Communications, Control, and Computing Technologies for Smart Grids in 2020 for (virtual,during Covid-19) Presentation.

2) IEEE Power & Energy Society General Meeting at Denver, CO in July 2022 for an onsite Best Paper Presentation and poster section.

3) 45 mins keynote invited talk with Title: “Towards Automated Machine Learning on Imperfect Data for Situational Awareness in Power System” in the Second ACM SIGEnergy Workshop on Fair, Accountable, Transparent, and Ethical (FATE) AI for Smart Environments and Energy Systems (A SenSys/BuildSys 2022 Workshop) Boston, Massachusetts, Nov,11 2022.

4) IEEE Power & Energy Society General Meeting at Orlando, FL in July 2023 for an onsite presentation and poster section.

PROFESSIONAL SERVICE

1) NSF Reviewer 2025.
2) Committee member in GSU Division Curriculum Committee (2022-2024).
3) Senate in GSU Graduate Council (2023-now).
4) Committee member in GSU Computer Science Program Search Committee (2022-now).
5) Chair in GSU Computer Science Program Curriculum Assessment Committee (2022-now).
6) Referee for student presentation and poster section in 2025 ILSAMP in ???, IL.
7) Referee for student presentation and poster section in 2024 ILSAMP in Naperville, IL.
8) Referee for student presentation and poster section in 2023 IEEE Power & Energy Society General Meeting at Orlando, FL.
9) Referee for student presentation and poster section in 2023 ILSAMP in Schaumburg, IL.
10) Advisor of Student Club of 'Hall of Faith' (2023-now).
11) Mentor in Research Experiences for Undergraduates (REU) Site at the University of Nevada Reno (UNR) in both 2022 and 2023 summer.
12) Reviewer for IEEE Transactions on Wireless Communications, IEEE Internet of Things and IEEE Access more than 20 papers.