Xichen Jiang

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Education

UNIVERSITY OF ILLINOIS Urbana, IL
Ph.D. in Electrical Engineering, August 2016.
Major fields of study: Reliability Theory.

UNIVERSITY OF ILLINOIS Urbana, IL
M.S. in Electrical Engineering, May 2012.
Major fields of study: Power System Security.

UNIVERSITY OF ILLINOIS Urbana, IL
B.S. in Electrical Engineering (*summa cum laude*), May 2010.

Academic Positions

WESTERN WASHINGTON UNIVERSITY Bellingham, WA

DEPARTMENT OF ELECTRICAL ENGINEERING
Assistant Professor, September 2016 - Present.

INSTITUTE FOR ENERGY STUDIES
Assistant Professor, September 2016 - Present.

Research Positions

UNIVERSITY OF ILLINOIS Urbana, IL

INFORMATION TRUST INSTITUTE
Research Assistant, May 2010 - August 2016.

Professional Experience

VIASAT Carlsbad, CA
Hardware Intern, Summer 2013.

EXXONMOBIL Joliet, IL
Instrumentation Intern, Summer 2009.

PROCTOR AND GAMBLE Cincinnati, OH
Controls Intern, Summer 2008.

COILCRAFT Silver Lake, IL
Research Intern, Summer 2007.

Courses Developed

WESTERN WASHINGTON UNIVERSITY
EE 372: Electrical Power and Electromechanical Devices.
EE 374: Energy Processing.
EE 378: Smart and Renewable Power.
EE 471: Energy Project Proposal.
EE 472: Energy Project Research and Development.
EE 473: Energy Project Implementation.

Peer-Reviewed Journal Publications

[**J8**] Q. Chen, M. Xia, T. Lu, **X. Jiang**, and W. Liu, "Short-Term Load Forecasting Based on Deep Learning for End User Transformer with Large Volatile Electric Heating Loads," *IEEE Access*, vol. 7, pp. 162697-162707, 2019.

[**J7**] G. Wang, H. Xin, D. Wu, P. Ju, and **X. Jiang**, "Data-Driven Arbitrary Polynomial Chaos-Based Probabilistic Load Flow Considering Correlated Uncertainties," *IEEE Transactions on Power Systems*, vol. 34, no. 4, pp. 3274-3276, July 2019.

[**J6**] Y. Liu, Y. Li, H. Gooi, Y. Jian, H. Xin, **X. Jiang**, and J. Pan, "Distributed Robust Energy Management of Multi-Microgrid System in the Real-Time Energy Market," *IEEE Transactions on Sustainable Energy*, vol. 10, no. 1, pp. 396-406, Jan. 2019.

[**J5**] P. Li, Y. Liu, H. Xin, and **X. Jiang**, "A Robust Distributed Economic Dispatch Strategy of Virtual Power Plant Under Cyber-Attacks," *IEEE Transactions on Industrial Informatics*, vol. 14, no. 10, pp. 4343-4352, Oct. 2018.

[**J4**] G. Rovatsos, **X. Jiang**, A. D. Domínguez-García, and V. V. Veeravalli, "Statistical Power System Line Outage Detection Under Transient Dynamics," *IEEE Transactions on Signal Processing*, vol. 65, no. 11, pp. 2787-2797, June 2017.

[**J3**] **X. Jiang**, J. Zhang, B. Harding, J. Makela, and A. D. Domínguez-García, "Spoofing GPS Receiver Clock Offset of Phasor Measurement Units," *IEEE Transactions on Power Systems*, vol. 28, no. 3, pp. 3253-3262, Aug. 2013.

[**J2**] **X. Jiang**, Y. C. Chen, and A. D. Domínguez-García,"A Set-Theoretic Framework to Assess the Impact of Variable Generation on the Power Flow," *IEEE Transactions on Power Systems*, vol. 28, no. 2, pp. 855-867, May 2013.

[**J1**] E. Hope, **X. Jiang**, and A. D. Domínguez-García, "A Reachability-Based Method for Large-Signal Behavior Verification of DC-DC Converters," *IEEE Transactions on Circuits and Systems I*, vol. 58, no. 12, pp. 2944-2955, Dec. 2011.

Peer-Reviewed Conference Proceedings

[**C11**] A. Radwan, Y. Mohamed, and **X. Jiang**, "A Hybrid Wind-Photovoltaic Generation System: Modeling and Performance Evaluation," in Proc. of International Conference on Smart Energy Grid Engineering, Oshawa, Canada, Aug. 2019.

[**C10**] D. Saunders, T. Thornton, **X. Jiang**, and J. Davishahl, "Photovoltaic System Performance Under Partial Shading Conditions: An Undergraduate Research Experience," in Proc. of the American Society for Engineering Education Annual Conference and Exposition, Tampa, FL, June 2019. **Best Student Paper Award**.

[**C9**] P. Shive and **X. Jiang**, "Electric Power Distribution System Reliability and Outage Costs," in Proc. of the American Society for Engineering Education PNW Section Conference, Corvallis, Oregon, Mar. 2019.

[**C8**] A. Bolstad and **X. Jiang**, "Cost and Benefits of Volt-VAR Optimization on Electric Power Distribution Systems," in Proc. of the American Society for Engineering Education PNW Section Conference, Corvallis, Oregon, Mar. 2019.

[**C7**] S. Guo, **X. Jiang**, T. Thornton, and D. Saunders, "Approximate String Matching of Power System Substation Names," in Proc. of Power and Energy Conference at Illinois, Champaign, IL, Mar. 2019.

[**C6**] T. Christman, N. Uhrich, P. Swisher, and **X. Jiang**, "A Statistical Approach for Line Outage Detection in Power Systems with Transient Dynamics," in Proc. of Probabilistic Methods Applied to Power Systems, Boise, ID, June 2018.

[**C5**] J. Davishahl, **X. Jiang**, S. Dever, and T. Christman, "A Cross-Institution Collaboration: Analysis of Power Electronic Technologies for Solar Panel Arrays," in Proc. of the American Society for Engineering Education Annual Conference and Exposition, Salt Lake City, UT, June 2018. (35%)

[**C4**] **X. Jiang**, Y. Chen, V. V. Veeravalli, and A. D. Domínguez-García, "Quickest Line Outage Detection and Identification: Measurement Placement and System Partitioning," in Proc. of the North American Power Symposium, Morgantown, WV, Sept. 2017.

[**C3**] **X. Jiang**, G. Rovatsos, A. D. Domínguez-García, and V. V. Veeravalli, "Comparison of Statistical Algorithms for Power System Line Outage Detection," in Proc. of the IEEE International Conference on Acoustics, Speech, and Signal Processing, Shanghai, China, May 2016.

[**C2**] **X. Jiang** and A. D. Domínguez-García, "A Zonotope-Based Method for Uncertainty Analysis in Power Systems with Renewable Generation," in Proc. of the North American Power Symposium, Pullman, WA, Sept. 2014. **Best Student Paper Award**.

[**C1**] Y. C. Chen, **X. Jiang**, and A. D. Domínguez-García, "Impact of Power Generation Uncertainty on Power System Static Performance," in Proc. of North American Power Symposium, Boston, MA, August 2011. **Best Student Paper Award**.

Book Chapters

[**B1**] **X. Jiang**, S. Guo, and S. Hossain, "Architecture of the Intelligent Power Grid of Tomorrow," in *Intelligent Power Grid of Tomorrow: Modeling, Planning, Control, and Operation*, Springer-Verlag, 2020. (50%)

Technical Reports

[**R3**] A. D. Domínguez-García, P. Sauer, Y. Chen, and **X. Jiang** *Sparse Sensing Methods for Model-Free Sensitivity Estimation and Topology Change Detection using Synchro-Phasor Measurements*, Power Systems Engineering Research Center, December 2016.

[**R2**] **X. Jiang** and A. D. Domínguez-García, *A Zonotope-Based Method for Capturing the Effect of Variable Generation on the Power Flow*, Power Systems Engineering Research Center, September 2014.

[**R1**] **X. Jiang**, B. Harding, J. Makela, and A. D. Domínguez-García, *Spoofing GPS Receiver Clock Offset of Phasor Measurement Units*, Coordinated Science Laboratory Technical Report UILU-ENG-12-2205, University of Illinois at Urbana-Champaign, June 2012.

Posters

J. Davishahl, **X. Jiang**, L. Bear, T. Christman, S. Dever, S. Winters, and D. Hickenbottom, *Comparison and Analysis of Module-Level Power Electronics for Solar Panel Arrays*, Advanced Technological Education Conference, Washington, D.C., October 2017.

S. Wellman, E. Urubio, R. Rodgers, J. Lund, and **X. Jiang**, *Fault Identification of DC-DC Converters Via Change Detection*, IES Energy Symposium, April 2017.

Invited Talks

Real-time Parameter Estimation of Power Flow Matrix, School of Computer Engineering and Science, Shanghai University, Shanghai, China, December 2017.

Set-theoretic Methods for Modeling Power System Dynamic Uncertainty, Department of Electrical and Computer Engineering, Zhejiang University, Hangzhou, China, December 2016.

Funding and Grants

EXTERNAL

X. Jiang, *Line Outage Detection and Location Identification in Distribution Systems*, Agency: Electric Power Research Institute, Duration: 2017 - 2018, Amount: $5,000, **PI**.

X. Jiang, *A Statistical Framework for Real-time Event Detection in Power Systems*, Agency: Electric Power Research Institute, Duration: 2016 - 2017, Amount: $5,000, **PI**.

INTERNAL

X. Jiang, *Snohomish PUD Professorship in Energy Studies*, Insistute for Energy Studies, Duration: Jan. 2018-Jan. 2019, Amount: $20,000, **PI**.

A. Marechal, T. Thornton, and **X. Jiang**, *Solar Powered Irrigation System for Western Washington University Outback*, Sustainable Action Fund Grant Program, Duration: 2018-2019, Amount: $5,000, **co-PI**.

X. Jiang, *PSSE Software for Power System Dynamical Simulation*, Office of Research and Sponsored Programs Grant-in-Aid, Duration: 2017-2018, Amount: $2,500, **PI**.

X. Jiang, *Power Electronics Circuit Simulation Software for Energy Courses*, Student Technology Fee Initiative, Duration: 2017-2018, Amount: $2,909, **PI**.

X. Jiang, *PLECS Circuit Simulation Software*, Office of Research and Sponsored Programs Mini Grant, Duration: 2016-2017, Amount: $1,000, **PI**.

Supervised Projects

X. Jiang, *Frequency Measurement Network GridEye Web Display*, Western Washington University and University of Tennessee, 2016 - Present.

S. Dever, T. Christman, D. Saunders, T. Thornton, and **X. Jiang**, *Solar Panel Evaluation for Maximum Power Point Tracking*, Western Washington University and Bellingham Technical College, 2016 - 2019 (Funded by the Office of Research and Sponsored Programs and the National Science Foundation).

A. Bolstad and **X. Jiang**, *Evaluation of Conservation Voltage Reduction in the Pacific Northwest Power Grid*, Institute for Energy Studies Energy Ambassador Internship, 2018.

P. Shive and **X. Jiang**, *Distribution System Reliability in the Pacific Northwest Power Grid*, Institute for Energy Studies Energy Ambassador Internship, 2018.

N. Uhrich and **X. Jiang**, *Quickest Change Detection for Line Outages Considering System Dynamics*, Institute for Energy Studies Energy Ambassador Internship, 2017.

P. Swisher, T. Christman, and **X. Jiang**, *Real-time Event Detection on the Power Grid*, Western Washington University, 2017 (Funded by the Office of Research and Sponsored Programs).

K. Clausen and **X. Jiang**, *Evaluating Electric Vehicle Charger Options*, Chelan County Public Utility District, 2017.

S. Wellman, E. Urubio, R. Rodgers, and **X. Jiang**, *Fault Detection and Identification in Power Electronic Converters*, Western Washington University, 2016 - 2017.

Service

PROFESSIONAL ORGANIZATIONS

Member, IEEE, 2009 - Present.
Member, IEEE Power and Energy Society, 2010 - Present.
Member, ASEE, 2016 - Present.

EXTERNAL

Reviewer, IEEE Transactions on Energy Conversion, 2018 - Present.

Reviewer, IEEE Transactions on Smart Grid, 2018 - Present.

Reviewer, IET Cyber-Physical Systems, 2017 - Present.

Reviewer, IEEE Transactions on Power Systems, 2013 - Present.

Reviewer, IEEE International Conference on Energy Internet, 2019.

Reviewer, Power and Energy Conference Illinois, 2015 - 2019.

Reviewer, American Society for Engineering Education Annual Conference, 2017 - Present.

Reviewer, Intelligent Systems Application to Power Systems Conference, 2017.

Proposal Review and Panel, National Science Foundation, 2017.

Session Organizer, "Smart Sensors, Communications, and Control," North American Power Symposium, September 2017.

Session Organizer, "Electric Vehicles Charging and Impact on Grid," North American Power Symposium, September 2017.

UNIVERSITY

Member, Faculty Senate, Western Washington University, 2018 - 2020.

Member, Academic Honesty Board, Western Washington University, 2017 - 2020.

Institute for Energy Studies Energy Management Faculty Search Committee Member, 2019 - 2020.

DEPARTMENT

Advisor for WWU IEEE-PES Chapter, 2019 - Present.
Department of Engineering and Design Library Liaison, 2017 - Present.
Advisor for WWU IEEE-HKN Chapter, 2017 - Present.
Department Scholarship Committee Member, 2017 - 2019.