

SIMING GUO, PHD

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EDUCATION

- Ph.D. Electrical Engineering** *May 2017*
University of Illinois, Urbana-Champaign, IL
Advisor: Thomas Overbye
Thesis: Improvements to Power System Dynamic Load Model Parameter Estimation
- M.S. Electrical Engineering** *May 2012*
University of Illinois, Urbana-Champaign, IL
Advisor: Thomas Overbye
Thesis: Parameter Estimation of a Composite Load Model Using a Hybrid Approach
- B.A.Sc. Engineering Science (Energy Systems)** *May 2010*
University of Toronto, Toronto, ON
Advisor: Joseph Tate
Thesis: Analysis and Improvements to a Wide Area Generator Outage Localization Algorithm

PROFESSIONAL EXPERIENCE

- Assistant Professor, *Engineering Science*** *Aug 2017 – Present*
Department of Physics and Engineering Science, Coastal Carolina University
- Research Assistant, *Power and Energy Systems*** *Aug 2010 – May 2017*
Department of Electrical and Computer Engineering, University of Illinois, Urbana-Champaign
- Undergraduate Research Assistant, *Energy Systems*** *May 2009 – Aug 2010*
Department of Electrical and Computer Engineering, University of Toronto
- Electrical Assembly Intern, *Longford International Ltd.*** *May 2008 – Aug 2008*
Mentor: Nao Tateishi
- Junior AutoCAD Technician, *Amico Corporation*** *May 2007 – Aug 2007*
Mentor: Carmen Ene

TEACHING EXPERIENCE

- Instructor, *Coastal Carolina University***
- ENGR 101: Introduction to Engineering *Fall 2017 – Present*
 - ENGR 201: Engineering Problem Solving *Spring 2021*
 - ENGR 202: Engineering Graphics *Spring 2018 – Spring 2019*
 - PHYS 206: Introductory Physics for Life Sciences II *Spring 2022*
 - PHYS 211: Essentials of Physics I *Spring 2020 – Spring 2021*
 - PHYS 212: Essentials of Physics II *Fall 2017 – Fall 2019*
 - ENGR 235: Electric Circuits *Fall 2017 – Present*
 - ENGR 244: Engineering Mechanics II: Dynamics *Fall 2020*
 - ENGR 315: Renewable Energy *Fall 2018 – Present*
 - ENGR 317: Signals and Systems *Spring 2022 – Present*
 - ENGR 321: Electronics *Fall 2019 – Present*
- Instructor, *University of Illinois, Urbana-Champaign***
- ENG 315: Learning in Community—Haiti Infrastructure and Development *Fall 2013*
 - ECE 330: Power Circuits and Electromechanics *Summer 2014 – Spring 2015*
- Teaching Assistant, *University of Illinois, Urbana-Champaign***
- ECE 330: Power Circuits and Electromechanics *Spring 2014 – Fall 2014*
 - ECE 476: Power System Analysis *Fall 2011*
 - ECE 530: Analysis Techniques for Large-Scale Electrical Systems *Fall 2013*

CAPSTONE AND INDEPENDENT-STUDY EXPERIENCE

Nikita Tolbert , Optimization	<i>Aug 2020 – Dec 2020</i>
Feng Jiang , Open Source Circuit Simulator	<i>May 2020 – Aug 2020</i>
Tamer Abu Safieh , Low Frequency Linear Driver	<i>May 2019 – Dec 2019</i>
James Bennett , Offshore Wind Speed Prediction	<i>Jan 2019 – May 2019</i>
Skylar Leslie , Future Prosthetics	<i>Jan 2018 – Dec 2018</i>
Troy Rodway , Regenerative Braking	<i>Jan 2018 – May 2018</i>

GRANTS

Horry County Higher Education Commission (\$19,563) CCU Department of Physics and Engineering Science Makerspace S. Guo (PI) , M. Gray, R. Gurka, G. Hitt, X. Kong, R. Murray	<i>Oct 2020</i>
Horry County Higher Education Commission (unsuccessful, \$41,000 requested) CCU Department of Physics and Engineering Science Makerspace S. Guo (PI) , G. Hitt, R. Murray	<i>May 2019</i>

HONORS AND AWARDS

Recognition for Exceptional Service and Support of International Students , CCU	<i>Oct 2020</i>
Outstanding Chapter Volunteer , University of Illinois IEEE PES/PELS/IAS	<i>Feb 2018</i>
Best Paper Award Runner-Up , Power and Energy Conference at Illinois	<i>Feb 2017</i>
Best Poster Award , PSERC Industry Advisory Board Meeting	<i>Dec 2015</i>
Instructors Ranked Outstanding, Top 10% , University of Illinois, Urbana-Champaign	<i>Aug 2014</i>
Queen Elizabeth II Aiming for the Top Scholarship , Ontario Student Assistance Program	<i>2006 – 2010</i>
Undergraduate Student Research Award , NSERC of Canada	<i>Apr 2009</i>
University of Toronto Scholar , University of Toronto	<i>Sep 2006</i>

PUBLICATIONS

Book Chapters

1. **S. Guo**, “Using video conferencing for group problem solving,” in *Designing Courses with Digital Technologies: Evidence and Examples by and for Higher Education Instructors*, Routledge, 2021, ch. 20.
2. X. Jiang, **S. Guo**, S. Hossain-McKenzie, “Architecture of the intelligent power grid of tomorrow,” in *Intelligent Power Grids of Tomorrow*, Singapore: Springer, 2020, ch. 1.

Papers

1. **S. Guo**, “Synchronous versus asynchronous online teaching of physics during the COVID-19 pandemic,” *Physics Education*, vol. 55, issue 6, Nov. 2020.
2. **S. Guo**, X. Jiang, T. Thornton, D. Saunders, “Approximate string matching of power system substation names,” in *Proc. Power and Energy Conference at Illinois*, Champaign, IL, Feb. 2019.
3. K. Zhang, H. Zhu, **S. Guo**, “Dependency analysis and improved parameter estimation for dynamic composite load modeling,” *IEEE Transactions on Power Systems*, vol. 32, issue 4, Jul. 2017.
4. **S. Guo**, K. S. Shetye, T. J. Overbye, “Network reduction based on propagation of large disturbances for load model validation,” in *Proc. IEEE PowerTech Conference*, Manchester, UK, Jun. 2017.
5. **S. Guo**, K. S. Shetye, T. J. Overbye, H. Zhu, “Impact of measurement selection on load model parameter estimation,” in *Proc. Power and Energy Conference at Illinois*, Champaign, IL, Feb. 2017.
6. K. Zhang, **S. Guo**, H. Zhu, “Parameter sensitivity and dependency analysis for the WECC dynamic composite load model,” in *Proc. Hawaii International Conference on System Sciences*, Waikoloa, HI, Jan. 2017.
7. **S. Guo**, T. J. Overbye, “A maximum a-posteriori based algorithm for dynamic load model parameter estimation,” in *Proc. International Conference on Smart Grid Communications*, Miami, FL, Nov. 2015.
8. **S. Guo**, T. J. Overbye, “Suitability of a dynamic load model to measurement-based parameter estimation,” in *Proc. 17th International Conference on Intelligent System Applications to Power Systems*, Tokyo, Japan, Jul. 2013.

- S. Guo, T. J. Overbye, "Parameter estimation of a complex load model using phasor measurements," in *Proc. Power and Energy Conference at Illinois*, Champaign, IL, Feb. 2012.

Reports

- H. Zhu, T. J. Overbye, B. Lesieutre, S. Guo, K. Zhang, "Load model complexity analysis and real-time load tracking (S-60)", Power Syst. Eng. Research Center, Tech. Rep., 2017.

Posters

- T. Rodway, S. Guo, "Effectiveness of regenerative braking in Myrtle Beach," poster presented at CCU Undergraduate Research Competition, Conway, SC, Apr. 2018.
- S. Guo, K. Zhang, B. Lesieutre, H. Zhu, T. J. Overbye, "Load model complexity analysis and real-time load tracking," poster presented at PSERC Industry Advisory Board Meeting, Atlanta, GA, Dec. 2016.
- S. Guo, K. Zhang, B. Lesieutre, H. Zhu, T. J. Overbye, "Load model complexity analysis and real-time load tracking," poster presented at PSERC Industry Advisory Board Meeting, Niskayuna, NY, Jun. 2016.
- S. Guo, K. Zhang, B. Lesieutre, H. Zhu, T. J. Overbye, "Load model complexity analysis and real-time load tracking," poster presented at PSERC Industry Advisory Board Meeting, College Station, TX, Dec. 2015.
- S. Guo, P. Huynh, B. Lesieutre, H. Zhu, T. J. Overbye, "Load model complexity analysis and real-time load tracking," poster presented at PSERC Industry Advisory Board Meeting, Westminster, CA, Dec. 2014.
- S. Guo, T. J. Overbye, "Load model parameter estimation in the presence of noise," poster presented at Modeling, Simulation and Optimization for the 21st Century Electric Power Grid, Lake Geneva, WI, Oct. 2012.

Conference Presentations

- X. Kong, M. Gray, S. Guo, "Hands-on STEM education during the pandemic: A fully-engaged, remote learning approach using Lego Mindstorms EV3," presented at South Carolina Conference on Innovations in Teaching and Learning, Conway, SC, Jul. 2021.
- S. Guo, X. Jiang, T. Thornton, D. Saunders, "Approximate String Matching of Power System Substation Names," presented at Power and Energy Conference at Illinois, Champaign, IL, Feb. 2019.

INVITED TALKS

Working in Academia University of Toronto, <i>Panel Discussion</i>	<i>Nov 2021</i>
Imagining Digital Learning in a Post-Pandemic World: Where Do We Go From Here? South Carolina Conference on Innovations in Teaching and Learning, <i>Panel Discussion</i>	<i>Jul 2021</i>
Effective Digital Learning Tools Coastal Carolina University, <i>Faculty Roundtable</i>	<i>Apr 2021</i>
Teaching During COVID-19: Challenges, Successes and Next Steps Coastal Carolina University, <i>Faculty Course Mentor Roundtable</i>	<i>Nov 2020</i>
Approximate String Matching Coastal Carolina University, <i>CCU High School Math Contest Keynote</i>	<i>Mar 2019</i>
University of Illinois Alumni in Power University of Illinois at Urbana-Champaign, <i>Power and Energy Conference at Illinois 2019 Panel Discussion</i>	<i>Mar 2019</i>
Challenges and Opportunities in the Smart Grid Coastal Carolina University, <i>One Talk One Time</i>	<i>Oct 2018</i>
Challenges and Opportunities in the Smart Grid Western Washington University, <i>Institute for Energy Studies Speaker Series</i>	<i>May 2018</i>
Power System Modeling and Visualization Coastal Carolina University, <i>SPS Undergraduate Research Talks</i>	<i>Apr 2018</i>

PROFESSIONAL SERVICE

Faculty Search Chair , <i>Assistant Professor of Engineering, CCU</i>	<i>Aug 2022 – Present</i>
Reviewer , <i>Measurement Science and Technology</i>	<i>Jun 2022 – Present</i>
Reviewer , <i>European Journal of Physics</i>	<i>Mar 2022 – Present</i>

Faculty Search Chair , <i>Lecturer of Engineering, CCU</i>	Jan 2022 – May 2022
Dean Search Committee Member , <i>Dean, Gupta College of Science, CCU</i>	Oct 2021 – Mar 2022
Reviewer , <i>The Physics Teacher</i>	Jan 2021 – Present
Senator , <i>CCU Faculty Senate</i>	Sep 2020 – Present
Reviewer , <i>IEEE Transactions on Sustainable Energy</i>	Aug 2020 – Present
Faculty Course Mentor , <i>CCU Coastal Office of Online Learning</i>	Aug 2019 – Present
Committee Member , <i>CCU College of Science Academic Integrity Committee</i>	Aug 2019 – Present
Faculty Search Chair , <i>Program Director of Engineering, CCU</i>	Aug 2018 – May 2019
Judge , <i>CCU Undergraduate Research Competition</i>	Apr 2018 – Present
ABET Accreditation Committee , <i>CCU Dept. of Physics and Engineering Science</i>	Aug 2017 – Present
Academic Advisor , <i>CCU Dept. of Physics and Engineering Science</i>	Aug 2017 – Present
Reviewer , <i>IEEE Transactions on Power Systems</i>	Sep 2016 – Present
Reviewer , <i>IEEE Transactions on Smart Grid</i>	May 2015 – Present
Publications Co-Chair , <i>IEEE Power and Energy Conference at Illinois</i>	Feb 2015 – Feb 2016
Conference Co-Chair , <i>IEEE Power and Energy Conference at Illinois</i>	Feb 2014 – Feb 2015
President , <i>IEEE PES/PELS/IAS Joint Student Chapter at UIUC</i>	Aug 2013 – Aug 2014
Reviewer , <i>Power and Energy Conference at Illinois</i>	Nov 2011 – Present
Treasurer , <i>IEEE Power and Energy Conference at Illinois</i>	Aug 2011 – Aug 2013
Treasurer , <i>IEEE PES/PELS/IAS Joint Student Chapter at UIUC</i>	Aug 2011 – Aug 2013
Co-Founder , <i>University of Toronto Citizen Engineers</i>	Sep 2009 – May 2010

PROFESSIONAL DEVELOPMENT

IRB Human Subjects Research Certificate , <i>Collaborative Institutional Training Initiative</i>	Aug 2022
IOP Peer Review Excellence Certification , <i>Institute of Physics</i>	Mar 2022
Best Practices for Digital Learning Certificate , <i>ABET</i>	May 2021
2021 ABET Symposium , <i>ABET</i>	Apr 2021
Open Textbook Network Faculty Workshop - Hard Sciences , <i>Partnership Among South Carolina Academic Libraries</i>	Jul 2020
Open Classroom Initiative , <i>CeTEAL</i>	Oct 2020
COOL Course Development Grant , <i>CCU Coastal Office of Online Learning</i>	Mar 2020 – Feb 2021
Introducing STEM Faculty to Teaching Ethics , <i>National Academy of Engineering</i>	Oct 2019
Teaching Effectiveness Institute Certificate , <i>Coastal Carolina University</i>	Aug 2019 – Apr 2020
ABET Continuous Improvement Assessment Forum , <i>ABET</i>	Oct 2019
The Completion Agenda Retention Workshop , <i>Coastal Carolina University</i>	Jul 2019
Echo360 North America Community Conference , <i>Echo360</i>	Jul 2019
Inclusive Pedagogy Workshop , <i>Coastal Carolina University</i>	Jan 2019
AAPT New Faculty Workshop , <i>American Association of Physics Teachers</i>	Nov 2017
CeTEAL workshops , <i>CCU Center for Teaching Excellence to Advance Learning</i>	Aug 2017 – Present
3rd Online Faculty Workshop of Pervasive & Mobile Computing Security , <i>Alabama A&M University</i>	Jul 2017
2013 TCIPG Summer School , <i>Trustworthy Cyber Infrastructure for the Power Grid</i>	Jun 2013
RTDS Simulator Introductory Training Course , <i>RTDS Technologies</i>	Jul 2011
Intermediate SCADA Security , <i>Idaho National Laboratory</i>	Jun 2011
2011 TCIPG Summer School , <i>Trustworthy Cyber Infrastructure for the Power Grid</i>	Jun 2011

PROFESSIONAL MEMBERSHIP

Member, IEEE	<i>Aug 2017 – Present</i>
Student Member, IEEE	<i>Aug 2010 – Aug 2017</i>
• Member, <i>IEEE Communications Society (COMSOC)</i>	<i>Jan 2016 – Aug 2017</i>
• Member, <i>IEEE Industrial Applications Society (IAS)</i>	<i>Mar 2014 – Dec 2014</i>
• Member, <i>IEEE Power and Energy Society (PES)</i>	<i>Aug 2010 – Aug 2017</i>
Student Member, CIGRE	<i>Dec 2016 – Aug 2017</i>

REFERENCES

Associate Professor Xichen Jiang, *Western Washington University*

Address: ET 268, MS 9086, 516 High Street, Bellingham, WA, 98225

E-mail: xichen.jiang@wwu.edu

Phone: +1 (360) 650-7766

Associate Professor T. Brian Bunton, *Coastal Carolina University*

Address: 121B Smith Science Building, 109 Chanticleer Drive East, Conway, SC, 29528

E-mail: bbunton@coastal.edu

Phone: +1 (843) 349-2066

Assistant Professor Scott Carr, *Coastal Carolina University*

Address: 123C Smith Science Building, 109 Chanticleer Drive East, Conway, SC, 29528

E-mail: scarr@coastal.edu

Phone: +1 (843) 349-6986

Associate Professor George Hitt, *Coastal Carolina University*

Address: 114C Smith Science Building, 109 Chanticleer Drive East, Conway, SC, 29528

E-mail: ghitt@coastal.edu

Phone: +1 (843) 349-4047

Professor Thomas Overbye, *Texas A&M University*

Address: 308C Wisenbaker Engineering Building, 188 Bizzell Street, College Station, TX, 77843

E-mail: overbye@tamu.edu

Phone: +1 (979) 458-5001