

Shuangshuang Jin, Ph.D.

Associate Professor, School of Computing
College of Engineering, Computing and Applied Sciences
Clemson University

1240 Supply St, North Charleston, SC 29405

Email: jin6@clemson.edu

Phone: 843-730-5119

CLEMSON
School of COMPUTING

ACADEMICS RESEARCH PEOPLE CONNECT NEWS & EVENTS RESOURCES

BREAKTHROUGH RESEARCH

The School of Computing prides itself on groundbreaking research on developing new technologies and understanding how technology can better shape the world.

School of Computing Quick Links:

- GIVING
- NEWS
- APPLY
- SEMINARS
- WE'RE HIRING

CLEMSON UNIVERSITY
MAKING WAVES IN THE LOWCOUNTRY

Innovation Campus Fuels Education, Research and Innovation in Charleston

Seated in the heart of South Carolina's Lowcountry, Charleston has grown to become a leader in the tech field among giants like Silicon Valley and New York City. Known primarily as a tourism destination, Charleston is earning a new reputation, recently touted a tech economy that is growing faster than the national average — and just as quickly as Silicon Valley. Home to more than 200 tech companies, Charleston's fast-growing tech hub is fueled by the young, creative talent flocking to the area.

As the state's leading supplier of engineers and one of the premier public colleges in the nation, Clemson University is positioned to play a vital role in encouraging the economic and educational growth of Charleston. Clemson's newest innovation campus in Charleston provides numerous platforms where students, researchers and industry come together to advance the area's knowledge base in new, dynamic ways. With centers dedicated to research and education, and through established partnerships with leading companies, Clemson's presence in Charleston will fuel even further advancements for generations to come.

Energy Research and Testing

Marine Conservation & Materials Research

Graduate Education

Prior Experience (2008-2017)

Senior Research Scientist, Electricity Infrastructure
Energy & Environment Directorate
Pacific Northwest National Laboratory
902 Battelle Blvd, Richland, WA 99354

The screenshot shows the Pacific Northwest National Laboratory website. At the top left is the logo for Pacific Northwest National Laboratory, operated by Battelle since 1965. To the right is the U.S. Department of Energy logo. A navigation menu includes links for PNNL Home, About, Research, Publications, Jobs, Newsroom, and Contacts, along with a search bar for PNNL. Below the navigation is a banner image with the text "Electricity Infrastructure" overlaid on a green, abstract background. The main content area is titled "Electricity Infrastructure" and contains two paragraphs of text. On the left side, there is a sidebar with a "Related Links" section containing links to "Energy & Environment Directorate" and "Electricity Infrastructure & Building Division".

Pacific Northwest NATIONAL LABORATORY
Proudly Operated by **Battelle** Since 1965

U.S. DEPARTMENT OF **ENERGY**

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Electricity Infrastructure

About EI

- EI home**
- Research Areas
- Staff
- Publications

Related Links

- Energy & Environment Directorate
- Electricity Infrastructure & Building Division

Electricity Infrastructure

The Electricity Infrastructure group develops integrated systems to monitor and diagnose the operating state of complex engineered processes. These processes range from electrical and thermal power generation and distribution to the end use of energy in industrial and residential facilities. The goals of our research are to reduce energy consumption, improve the stability and reliability of our nation's energy infrastructures, and improve the general quality of life. Our systems may be as small as a heat pump that can fit into the palm of your hand, or as large in scale as real-time monitoring of the electrical grid that provides power to the western United States.

Our group consists of more than 70 highly qualified researchers performing contract funded R&D for both the U.S. Government and commercial clients. The scope of our offerings ranges from consulting services and technical assessments to the development and deployment of complex control and diagnostic systems.

The Electricity Infrastructure group is part of the Energy and Environment Directorate of the Pacific Northwest National Laboratory.

Research Interests, Perspectives, and Capabilities

Apply advanced computer science technologies to other disciplines to solve pressing scientific and engineering problems.

High-Performance Computing

Big Data

Machine Learning

Data Analytics

Visualization



Power Grid

Energy System

Automotive

System Biology

Proteomics

Areas of Relevance for Clean Coal and Carbon

- Fossil Energy Power Systems
 - Energy efficiency: energy efficiency improvement at various stages of the fossil power production line.
 - Cyber physical security: online anomaly detection to identify and respond to faults and attacks in fossil power generation, operation, control and communication networks to enhance situational awareness.
 - Energy optimization: efficient utilization of intermittent renewable resource and fossil fuel generation to optimize power supply and demand to lower electricity bills, prevent cascading failures, and reduce carbon footprint.