Smart Grid Technologies

VISION: Sustainable power distribution, shifting to energy delivery using smart grids.

Research Activities

Energy Delivery

The modernized grid will deliver energy via the bulk system to transactive, customer-driven microgrids that manage local resources to supply electricity in the most autonomous, cost-effective, risk aware and resilient manner.

Develop centralized as well as distributed implementations of algorithms based on stochastic optimization for scheduling and control of all distributed resources.

Communication Infrastructures

Information-Centric Networking in the Smart Grid: Our Architecture

Security and Protection

Supervisory Protection

- Data-driven models
- Physics-based models

Coordination

- Multi-agent technologies to enable the energy delivery paradigm
- Investigate coordination mechanisms in energy delivery network (e.g., customer-driven microgrid)
- Agents are completely cooperative
- Agents are partially cooperative
- Agents are completely selfish
- Contribute to the realization of the smart grid

30 New Collaborations

Outreach

Served 3,856 from Fall 2016 - Fall 2017

All outreach initiatives are built to showcase NMSU and the exceptional research achieved within iCREDITS. The formal and informal educational practices integrated by iCREDITS Outreach, provided extensive training opportunities and contact hours with participants. The diversity within the iCREDITS Outreach programming allows for flexibility, broad applications, high participant connectivity, and the ability of new users to re-engage with the lessons beyond the initial contact. Thus, building the foundation for a better trained and well-informed community on Smart Grid Technologies.

Curriculum Development

Middle and High School Roadshows

Professional Development in Communication

Prototype Development - Smart Outlet

Research Exchange Undergraduate program

Training Workshops

Publications

https://icredits.nmsu.edu/publications/