

Call for Papers, DARE 2018

Dublin, Ireland, September 2018

Concerns about climate change, energy security, and dwindling fossil fuel reserves are stimulating ever increasing interest in the generation, distribution, and management of renewable energy. While a lot of attention has been devoted to energy generation technologies, an equally important challenge is the integration of energy extracted from renewable resources into existing electricity distribution and transmission systems. Renewable energy resources like wind power and solar energy are often spatially distributed and inherently variable, necessitating the use of computing techniques to predict levels of supply and demand, coordinate power distribution, manage the operations of storage facilities and detect faults and cybersecurity threats. These challenges rely heavily on the development and appropriate use of techniques, systems and algorithms which can effectively handle large quantities of data to detect, predict and respond intelligently to events affecting the generation and supply of energy from renewable energy resources.

Data analytics is the science that encompasses machine learning (including deep learning), and big data, focusing on cleaning, transforming, modeling and extracting actionable information from large, complex data sets. A renewable energy system generates large amounts of data from various components such as smart meters and relays. The potential value of this data is huge, but exploiting this value will be almost impossible without the use of proper analytic techniques. With the systematic application of analytics and machine learning techniques on the this data, better economy, efficiency, reliability, and security can be achieved.

This year, we would also like to highlight the integration of renewable energy in *society* as an additional component of this challenge. It is clear that the spread of renewable energy will require the increasing participation and support of end users. In this context, related topics include demand response, residential PV installations and even social media analytics in the context of building and measuring awareness of and attitudes towards renewable energy.

The focus of this workshop is to study and present the use of various data analytics techniques in the different areas of renewable energy integration. Authors are invited to submit their original and unpublished research contributions to DARE in areas relevant to the application of data analytics for renewable energy integration including but not limited to the following:

- Data analytics for renewable energy sources
- Smart grid applications of data analytics and machine learning
- Data analytics for power generation, transmission, and distribution
- Fault detection, classification, location, and diagnosis
- Smart grid cyber security
- Applications of Deep Learning
- Demand response
- Customer profiling and smart billing
- Load forecasting, wind power forecasting, and PV power forecasting
- Power quality detection
- Power system state estimation

- Social Media Analytics
- SCADA/DCS data analytics
- Islanding detection
- Parallel and distributed data analytics for renewable energy integration
- Big data and cloud-based analytics for renewable energy integration

Paper Submission

Two types of submissions are invited:

- Full papers (Maximum 12 pages, including title page and bibliography)
- Short position papers (Maximum 6 pages, including title page and bibliography)

Submitted papers will be peer-reviewed and selected on the basis of these reviews. Accepted papers will be presented at the workshop and published in the workshop proceedings.

For manuscript submission, please use the EasyChair site at:

<https://easychair.org/conferences/?conf=dare2018>

Manuscripts should adhere to the guidelines of Springer LNCS/LNAI format (<http://www.springer.com/computer/lncs?SGWID=0-164-6-793341-0>)

Key Dates

- Workshop paper submission deadline: Monday July 2, 2018
- Workshop paper acceptance notification: Monday July 23, 2018
- Workshop paper camera-ready deadline: Monday August 6, 2018
- Workshop day: 10th or 14th of September 2018

More details regarding the workshop are available from the website: <http://dare2018.dnagroup.org>