Data Scientist (Forecasting)
Nanyang Technological University

Job Title Data Scientist (Forecasting)
Department Energy Research Institute @ NTU
Institution Nanyang Technological University
Singapore, , Singapore

Date Posted Nov. 11, 2025

Application Deadline Open untill filled
Position Start Date Available Immediately

Job Categories Research Scientist/Associate

Academic Field(s) Electrical and/or Electronics

Job Website https://ntu.wd3.myworkdayjobs.com/Careers/job/CleanTech-One/Data-Scientist--Forecasting-_R00022529

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Job Description

Established in 2010, the Energy Research Institute @ NTU (ERI@N) is a pan-university research institute that focuses on systems-level research for tropical megacities. It performs translational research that covers the energy value chain from generation to innovative end-use solutions, motivated by industrialisation and deployment. ERI@N has multiple Interdisciplinary Research Programmes which focus on translational Research, Development & Deployment which focus on specific area of the energy value chain, and a number of Living labs and Testbeds which facilitate large scale technology deployment enabling validation and demonstration of real-world applications.

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For more details, please view https://www.ntu.edu.sg/erian

Multi-Energy System & Grids Team is looking for a Research Fellow in distribution network optimization and flexibility planning using distributed energy resources. The successful candidate will develop and implement a flexibility planning tool for electrical distribution grids. The methodology used shall consider behind-the-meter installations at the consumer side and installations by the utility, considering different scenarios, with the goal of achieving grid reinforcement and deferring capital expenditure. The tool would also assist in computing the technical parameters related to the contractual configuration through which those who possess the distributed energy resources can be engaged.

Key Responsibilities:

- Power system planning, analysing impact of renewable energy and storage on electrical distribution systems, optimization under uncertainty, and flexibility planning using distributed energy resources (DERs).
- Design & develop optimization algorithms/tools to plan the deployment of DERs such as energy storage systems (ESS), photovoltaic generations (PV), electric vehicle charging stations (EVCS), flexible building loads, in view of the advanced utility grid operations, ancillary services, and the changes in distribution network.
- Mathematical modelling of the system-level and device-level constraints of distribution networks with DERs, and applications of stochastic programming/approximate dynamic programming approach. Implementation of distribution power-flow methods for DER-rich networks and practical modelling of flexibility of the DER assets and the network, considering the operating envelopes and probabilistic power-flows. Modelling of DER-based integrated grid ancillary services that maintain reliability and stability (e.g., voltage/power management, fast demand response, peak demand management, network restoration service, and electric vehicles-based services

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(V2G/G2V)).

- Constrained optimization problem formulations & solution techniques: convex optimization, dynamic programming, NLP, MILP and MINLP.
- Decomposition and relaxation techniques to tackle computational problems in distribution grid planning. Engage the industry research collaborator in the guided development of the flexibility planning and contract configuration.
- Conduct hardware-in-the-loop (HIL) simulations using OPAL-RT solutions.
- Proposal development & grant writing

Job Requirements:

Core Competencies

Core Expertise

- Power System Analysis and modelling
- Renewable Energy Integration & Distributed Energy Resources Control & Coordination
- SMART Grid Technologies, Hybrid Systems & microgrids
- Power Electronics & Control System

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Technical Proficiency

- Power Flow Analysis (AC/DC), Fault & Stability analysis, grid planning & expansion modelling
- Skilled in tools such as Python, R, MATLAB/Simulink, DlgSILENT PowerFactory, PSCAD, PSS, OpenDSS, HOMER Pro, etc
- MPC, Real-time control, economic dispatch, DR Strategies

Communication Skills
Capable of translating technical insights into actionable recommendations for diverse stakeholders.

Problem-Solving
Innovative and solution-oriented approach to addressing netwrok challenges and improving model accuracy.

Collaboration & Teamwork
Experience working in interdisciplinary teams and engaging with engineers, analysts, and policy experts.

Attention to Detail
Precision in data handling, model validation, and documentation.

Project Management

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Ability to manage multiple research tasks, meet deadlines, and contribute to long-term strategic goals.

Continuous Learning
Commitment to staying updated with the latest forecasting techniques, energy technologies, and industry trends.

Qualification

- **Education**:
  Ph.D. degree in Electrical/Computer Engineering, specialized in Power Systems/Renewable Energy Planning/Optimization
- **Experience**:
  5-8 years of experience

We regret to inform that only shortlisted candidates will be notified.

Contact Information

Please reference Academickeys in your cover letter when applying for or inquiring about this job announcement.

Contact

Singapore