

Applied Energy Division:

***Postdoctoral position focused on de-carbonization,
electricity infrastructure reliability, and resilient energy delivery***

The Applied Energy Division is dedicated to research and development that contributes to science, sustainability, SLAC's impact and relevance, the U.S. energy situation, and national competitiveness. SLAC's translational research program in sustainability and applied energy technologies includes a strategic focus on batteries and energy storage, the power grid, water desalination, solar energy, and advanced manufacturing technologies.

The Grid Integration, Systems and Mobility (GISMo) team, part of the Applied Energy Division, is a multidisciplinary research group exploring cross-cutting areas in power grid, building and ambient intelligence, and human mobility. In our research, we aim to increase the efficiency and reliability of the power grid with high penetration of distributed energy resources, improve our daily interactions with our environments, and answer key challenges in the electrification of transportation. Our research is motivated by the drive to integrate clean energy technology to enable 100% clean energy for all.

We are seeking postdoctoral researchers who care deeply about contributing to impactful applied research to develop solutions for the urgent challenges of de-carbonization, electricity infrastructure reliability, and resilient energy delivery. Postdoctoral researchers will lead the development and implementation of high-impact tools and techniques using advanced analytical and machine learning tools.

Successful candidates are expected to conduct systematic literature reviews, propose and implement methodologies for simulation, modeling, and analysis of electric power systems, building energy systems, and electric mobility solutions. Postdoctoral researchers are responsible for authoring reports, presenting findings, and supporting proposal writing efforts in the GISMo group.

Specific responsibilities (include but are not limited to):

- Independently research, conceptualize, and document scientific work in electric power systems with particular emphasis on system reliability, resilience in the presence of renewables and distributed energy resources.
- Document methodologies, solutions and implementation; maintain and update documentation as needed.

- Develop analytics using machine learning and optimization methods that solve the challenges in electric power system operations and planning.
- Serve as a technical resource for scientists, engineers, and other post-doctoral researchers.
- Verify, validate, compare, evaluate, and present results of work products.
- Supervise undergraduate intern and graduate students.

Minimum Qualifications:

- PhD in engineering field with energy systems, electrical engineering or power systems engineering background.
- Knowledge of machine learning, optimization and control methodologies.
- Demonstrated proficiency in Python, GitHub, Cloud platforms and data processing.
- Experience writing academic and research papers.
- Flexibility and interest to work independently in a dynamic, high-productivity research environment.
- Strong background and interest in electricity grid resilience.

Preferred Qualifications:

- Exceptional technical writing skills.
- Experience working with power simulation tools, including PSLF, PSS/E, EMTP, OpenDSS, HELICS, and GridLAB-D.
- Strong communication skills with both technical and non-technical groups.
- Strong organizational skills.
- Big picture understanding of problems in the renewable energy space.
- Demonstrated interest in renewable energy and distributed energy resources.
- Ability to lead activities on structured team development projects.
- Understanding of smart grid concepts and recent technology advances.

What we offer you:

- A constant stream of new things to learn. We're always expanding into new areas, bringing in new projects and developing new technologies in the Applied Energy field.
- Growth and mentorship from exceptionally talented engineers and scientists from SLAC and Stanford University, plus an opportunity for you to mentor new students and staff.
- A mission-driven, stable, collaborative, highly interdisciplinary, and supportive work environment.

Interested candidates should submit a cover letter with CV to David Chassin (dchassin@slac.stanford.edu).

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