

Postdoctoral Research Associate in Controls Engineering

Measurement Science and Systems Engineering Division Energy and Engineering Sciences Directorate Oak Ridge National Laboratory Oak Ridge, Tennessee

ORNLO9-119-MSSE

Project Description:

The Energy and Engineering Sciences Directorate/Measurement Science and Systems Engineering Division (MSSSED) has openings for postdoctoral research fellowships in Control Systems Engineering to support program activities related to the design, analysis, development, testing, and fielding of advanced control devices, networks and systems. Areas of specialization include a combination of some or all of the following: modeling and analysis of new control techniques and algorithms, systems engineering; embedded controls; process controls (including closed loop applications); programmable logic controllers; high speed diagnostics; sensors and instrumentation; documentation (including requirements specifications, test procedures, user's guides, and design documents); and safety systems. Candidate(s) will work closely with project lead scientists and engineers through all phases of the technology development process. This position requires a strong technical background and well-developed verbal and written communication skills. Candidate(s) will report to the Sensors and Controls Systems Group Leader.

Essential Duties:

- Develop designs for advanced control architectures and methods, process control equipment, including design drawing and specifications as necessary.
- Design and develop control applications using formal software engineering methods (system analysis, design, and programming; formal QA and reviews).
- Design and develop models and perform analyses to characterize system performance.
- Develop user interface specifications and designs.
- Perform installation and checkout as necessary to bring designed systems into operation at laboratory bench scale, including generation of formal functional test procedures.
- Document all designs and maintain system configuration control.
- Participate in or lead formal and informal design reviews.
- Ensure all assignments are performed in accordance with ES&H, security, and business practice requirements and policies.

Qualifications:

- Ph.D.in Electrical Engineering or a related field with specific knowledge and skills in control systems theory of operation, control algorithm design, and systems implementation.

- Experience in the design and implementation of process electronic control systems.
- Demonstrated programming skills to include computer languages commonly employed in this field.
- Experience working with Windows XT, Linux, VxWorks, LabVIEW, MatLab, or real-time operating systems.
- -Experience working in a team environment that includes scientists, engineers, technicians, and designers.
- Demonstrated ability to identify, define, and solve multidisciplinary problems in a timely and cost effective manner.
- Demonstrated ability to accomplish multiple parallel tasks.
- Demonstrated effective presentation and verbal/written communication skills.
- Demonstrated creativity and initiative.

Applicants cannot have received the most recent degree more than five years prior to the date of application and must complete all degree requirements before starting their appointment.

Desired Skills, Knowledge, and Abilities:

- Experience in distributed control systems.
- General background in safety systems and industrial control systems.
- Programming experience in C, C++, or PLC languages.
- Experience with formal software quality assurance methods.
- Experience with digital communication networking
- Candidate must be capable of obtaining and maintaining a DOE security clearance

Technical Questions:

For technical questions regarding the position, please contact Roger Kisner at kisner@ornl.gov

How to Apply: (Interested candidates need to apply as soon as possible.)

Qualified applicants may apply online at https://www2.ornl.gov/ORNL_POST/. All applicants will need to register before they can begin the online application. For complete instructions, on how to apply, please see the instructions at <http://www.ornl.gov/orise/edu/ornl/ornl-pdpm/application.htm>. Please reference the position title and number, when corresponding about this position.

This appointment is offered through the ORNL Postgraduate Research Associates Program and is administered by Oak Ridge Associated Universities (ORAU). This appointment is open to all qualified U.S. and non-U.S. without regard to race, color, age, religion, sex, national origin, physical or mental disability, or status as a Vietnam-era veteran or disabled veteran.