Research Associate III  
(Software Engineer)

Overview:
The Cooperative Institute for Research in the Atmosphere (CIRA) at Colorado State University seeks to fill a professional scientific position designed to conduct collaborative research with the National Oceanic and Atmospheric Administration (NOAA) located at the Earth System Research Lab (ESRL), Global Systems Division (GSD) in Boulder, CO. **Office will be in Boulder, CO. This position is located in a federal facility and requires the ability to pass a National Agency Check with Inquiries (NACI, federal background check) for building access.**

Background:
The Cooperative Institute for Research in the Atmosphere (CIRA) at Colorado State University (CSU) is a multi-million dollar research organization located on CSU’s Foothills Campus in Fort Collins, Colorado. CIRA is a cooperative institute that is also a research department within CSU’s College of Engineering, in partnership with the Department of Atmospheric Science. Its vision is to conduct interdisciplinary research in the atmospheric sciences by entraining skills beyond the meteorological disciplines, exploiting advances in engineering and computer science, facilitating transitional activity between pure and applied research, leveraging both national and international resources and partnerships, and assisting NOAA, Colorado State University, the State of Colorado, and the Nation through the application of our research to areas of societal benefit.

NOAA's Global Systems Division (GSD) of the Earth System Research Laboratory (ESRL) is a federal science and research laboratory under NOAA’s Office of Oceanic and Atmospheric Research. GSD provides the National Weather Service (NWS) and the nation with environmental observing, prediction, computer, visualization, and information systems. These systems deliver data, forecasts, and predictions of weather, including severe weather events, within the next few minutes to weeks away. The Global Systems Division (GSD) of the Earth System Research Laboratory (ESRL) is a leader in the applied research, directed development, and technology transfer of environmental data, models, products, and services that enhance environmental understanding with the outcome of supporting commerce, protecting life and property, and promoting a scientifically literate public.

The Forecast Impact and Quality Assessment Section (FIQAS) within the Evaluation and Decision Support Branch of the ESRL’s Global Systems Division is seeking an experienced software engineer to support the expansion of our automated impact-based forecast and verification tools and their transition to operations. The FIQAS Team is a leader in providing automated verification and decision support web-based tools to improve the use of weather information for aviation operations. These tools provide an integrated platform allowing forecasters to interact with weather products and translate weather information for better aviation operational decisions.
Responsibilities: The individual in this position will be a mid-level software developer supporting the development, enhancement, and transition of FIQAS verification and decision support tools. The incumbent will work with the software and science teams, and group leader who will set long term goals and priorities. Duties will include porting Java applications to C++ to operate on NWS high-performance computing systems, developing scripts and test procedures, using software repositories, operationalizing prototype code, and developing generalized verification capabilities. Application areas may also include research in machine learning, cloud solutions, and NoSQL database solutions. This position will report to the FIQAS Section Chief.

Software Development: 75%
- Implementing application software components to support FIQAS technologies
- Operationalizing prototype software for transition to NWS operations
- Porting Java applications to C++ to operate in a HPC environment
- Identifying, evaluating, and addressing technical risks associated with application development and transition
- Collaborating with FIQAS Technical Lead and other team members on design and implementation of FIQAS solutions

Exploratory Research and Development: 10%
- Researching and learning relevant technologies as needed, including
  - Machine learning
  - Cloud solutions
  - NoSQL database solutions

Documentation and Reporting: 15%
- Prepare software documentation in collaboration with team members.
- Prepare status reports as required by the project sponsor and CIRA.
- Prepare and deliver technical talks and presentations as requested.

Required Skills and Experience
- This position is located in a federal facility and requires the ability to pass a National Agency Check with Inquiries (NACI, federal background check) for building access.
- Bachelor’s degree or equivalent in Computer Science, Mathematics, or a Physical Science
- 5 years of relevant experience
- 3 years minimum of professional software development experience
- 3 years minimum C++ application development experience
- 1 year minimum python experience
- Experience developing software using object-oriented design principles and sound development practices
- Experience working with Relational Database Management Systems (RDBMS)
- Experience implementing scientific or mathematical algorithms
- Proficiency working in Linux environment
- Able to work from high-level requirements and engage in an iterative software development life cycle methodology
● Able to adapt to changing requirements, including changes late in the development cycle
● Able to work independently on complex tasks
● Able to work in small (2-5) groups at all levels of the software lifecycle (design, architecture, development, deployment, support)
● Excellent written and verbal communication skills
● Willing and able to seek answers from teammates and external teams

Preferred Skills and Experience
● 1 year minimum professional java application development experience
● Experience using
  ○ Git configuration management tool
  ○ Java development support tools including maven, gradle, and eclipse IDE
  ○ Open source RDBMS such as MySQL and postgresQL
  ○ Large (preferably scientific) datasets such as meteorological data
  ○ NetCDF/HDF5 data format
  ○ HPC systems
● Familiarity with the verification and statistical analysis domain
● Experience with the aviation weather domain

Background Check:
Colorado State University is committed to providing a safe and productive learning and living community. To achieve that goal, we conduct background investigations for all final candidates being considered for employment. Background checks may include, but are not limited to, criminal history, national sex offender search, and motor vehicle history. In addition, this position is located in a federal facility and requires the ability to pass a National Agency Check with Inquiries (NACI, federal background check) for building access.

Commitment to Diversity and Inclusion:
Reflecting departmental and institutional values, candidates are expected to have the ability to advance the Department's commitment to diversity and inclusion.

Application Deadline: Applications will be accepted until all positions are filled; however, to ensure full consideration applications should be submitted by 11:59PM on August 19, 2018. Apply electronically by clicking “Apply to this Job” at the following website: http://jobs.colostate.edu/postings/58804. References will not be contacted without prior notification of candidates. Please be sure to address the required qualifications in the application materials.