Overview
The Cooperative Institute for Research in the Atmosphere (CIRA) at Colorado State University (CSU) seeks to fill a full-time software engineering position for its collaborative research and development as a Cooperative Institute with the Weather Information and Applications Division of the National Oceanic and Atmospheric Administration (NOAA) National Weather Service (NWS) Meteorological Development Laboratory (MDL) in Silver Spring, MD. The position is for a senior software engineer whose background includes enterprise-level design and development using Java, the Spring Framework, and the Java Persistence Architecture (JPA) with Hibernate and PostgreSQL. This position is located in a federal facility in Silver Spring, MD and requires the ability to pass a National Agency Check with Inquiries (NACI) Tier 1 federal background check for building access. The office will be in Silver Spring; however, the option exists to work remotely from your home/office with periodic coordination meetings in Silver Spring.

Background
CIRA is a multi-million-dollar research organization located on CSU's Foothills Campus in Fort Collins, CO. 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 the nation, the NWS, the State of Colorado, and CSU through the application of its research to areas of societal benefit.

The collaboration between CIRA and the MDL centers on providing technical expertise to the MDL by keeping abreast of current and upcoming technologies and applying them to CIRA and the MDL. This focus includes investigating new techniques that can be used in the next generation of operational forecast and guidance products; designing and developing operational decision support services; providing a framework to foster innovation and science sharing while promoting best practices; and helping streamline the Research to Operations (R2O) pipeline. Through this partnership, CIRA has been an integral part of key projects highlighted in the NWS Weather-Ready Nation Roadmap.

Position Overview
The Weather Information and Applications Division of the MDL seeks a Software Engineer to work on the Impact-based Decision Support Services (IDSS) Management System (IMS) project. This project will create for the NWS a set of nationally consistent and operationally supported tools for IDSS.

This position requires senior experience in enterprise-level Java, Spring/Hibernate/JPA, and PostgreSQL design and development. In collaboration with the project team, the individual in this position will help design, develop, test, refine, and document IMS. An enterprise system with many facets, IMS will consist of browser-based graphical user interfaces as well as a web-based API, behind which will sit a PostgreSQL database. Slack bots will also form part of IMS. IMS will be built using the Spring Framework and make extensive use of Hibernate and JPA in order to effect database persistence. Other technologies on which IMS will depend are
Docker (for container-based deployment) and Vaadin (for web application development), and IMS will run within the Amazon Web Services platform. The individual in this position should have the experience needed both to help guide Java software development that results in more optimal, higher performance enterprise applications and to test and benchmark system components. A high-level priority for the NWS, IMS has a number of stakeholders and collaborating groups/institutions, so the work will involve coordinating with them in order to ensure that objectives are met. As a senior position, the individual who occupies it should be able to guide more junior members of the project team in technical matters. The work will include participating in twice-weekly development discussions, and semi-annual in-person meetings may take place in Silver Spring. The work may also involve assisting with the development or provision of project-related presentations.

This position reports to a CIRA Senior Research Associate who also works on the project.

**Decision Making**

Decision making depends on the scale of each assignment and issues involved; the chosen course of action may need to be selected from many solutions, dependent upon the end user and technological requirements, and may require coordination with other members of the project team to reach a final decision. Decisions include the assessment of unusual circumstances, variations in approach, and handling of incomplete or conflicting data. The position requires making many decisions concerning such things as interpreting considerable amounts of data, planning the work, or refining methods and techniques. This independent position involves working in coordination with the IMS Project Manager to go over progress and next steps. The individual will set priorities that correspond to importance and/or urgency of particular upgrades and other work activities.

**Position Responsibilities**

**Software Engineering—90%**

- Working with the project team, design, develop, test, and refine IMS
- As needed or required, learn other technologies on which the project depends, e.g., Docker and Vaadin
- As needed or required, interface with project stakeholders and collaborating groups/institutions to coordinate and/or effect project goals/plans
- As needed or required, serve as a technical lead to more junior members of the project team
- Participate in project meetings

**Documentation and Reporting—10%**

- In collaboration with the project team, document IMS
- As needed or requested, give or assist with presentations related to IMS
- As needed or requested, provide status reports to CIRA and/or the project sponsor

**Required Qualifications:**

- Must be legally authorized to work in the United States by the start date. CIRA will not sponsor a visa for this position now or in the future.
- Ability to pass a National Agency Check with Inquiries (NACI) Tier 1 federal background check because the position is located inside a federal facility
- B.S. in computer science or software engineering AND
- 10+ years’ software engineering/development experience and a **OR**
  - M.S. or Ph.D. in computer science or software engineering AND
5+ years’ software engineering/development experience and 5+ years’ experience using Java in enterprise applications, with 2+ years of that experience being in Java 11+
● 3+ years’ experience using the Spring Framework in enterprise applications
● 2+ years’ experience using JPA, Hibernate, and PostgreSQL in enterprise applications
● 2+ years’ experience developing on Linux/Unix systems
● 2+ years’ experience working with APIs and JSON
● 2+ years cloud computing experience
● 1+ years’ experience using Git
● 1+ years’ experience using Maven

Desired/Preferred Qualifications
● Experience with the following methodologies, technologies, and tools:
  ○ Agile
  ○ Amazon Web Services
  ○ Bash
  ○ Docker
  ○ Flyway
  ○ Gerrit
  ○ GIS shapefiles
  ○ Java Topology Suite
  ○ Jenkins
  ○ PostGIS
  ○ Redmine
  ○ Slack
  ○ Vaadin
  ○ XML
● Experience working as a member of a small (3-6 person) team
● Experience adhering to software development best practices

To ensure full consideration applications should be submitted by 11.59pm MT Friday, January 6, 2023. Apply electronically by clicking “Apply to this Job” at the following website:
https://jobs.colostate.edu/postings/114916.
References will not be contacted without prior notification of candidates. In your cover letter, please specifically address the required and preferred qualifications of this position. A cover letter that fails to address the required and preferred qualifications of this position may not be considered further after review by the search committee. CSU is an EO/EA/AA employer and conducts background checks on all final candidates.