

Research Associate II/III
Fire Weather Testbed Cloud
Developer
25-108

The Cooperative Institute for Research in the Atmosphere (CIRA) at Colorado State University (CSU) seeks to fill a full-time Cloud Developer position designed to conduct collaborative research with the National Oceanic and Atmospheric Administration (NOAA) located at the Global Systems Laboratory (GSL) in Boulder, CO. The individual in this position will work in the NOAA/OAR/GSL Weather Informatics and Decision Support (WIDS) Division's Fire Weather Testbed (FWT). This position will be responsible for setting up and maintaining cloud applications and solutions to support FWT experiments, including installing experimental software packages and data sources. **The office will be in Boulder, CO, at a federal building and requires the ability to pass a tier 1 federal background check.**

This full time position is located in a federal facility in Boulder, CO and requires the ability to pass a National Agency Check with Inquiries (NACI) tier 1 federal background check for building and system access. This position requires a NOAA Common Access Card (CAC) ID badge for computer access and therefore is open ONLY to citizens of the United States and lawful permanent residents in possession of a physical USCIS "Green Card." An onsite presence at the GSL in Boulder, CO, is required three (3) days a week with the option to telework two (2) days a week, scheduled in coordination with the FWT project team.

Background

CIRA 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.

The office is located in NOAA's Global Systems Laboratory (GSL), which is a federal science and research laboratory under NOAA's Office of Oceanic and Atmospheric Research. GSL provides the National Weather Service (NWS) and the nation with environmental observation, 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. GSL 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.

Housed at GSL, the FWT is a new NOAA testbed dedicated to serving the wildfire communities through pursuing improvements to fire weather forecasting and decision support services. These improvements will be achieved by connecting stakeholders and their information needs to the scientific research and development communities. The FWT is a physical and virtual environment designed to bring the wildfire community together, with an end goal of a safer society and healthier environment achieved through scientific and technological advances. Numerous experiments will be conducted in the FWT and will include a broad spectrum of science fields including atmospheric, geophysical, hydrologic, and environmental sciences as well as social and behavioral sciences.

CSU recognizes the importance of supporting its employees as they balance their career, personal and family life, and that employees must be able to recharge, feel protected in their employment, and take the time they need to improve their overall productivity and health. Faculty, Administrative Professional, and other Non-Classified Staff are provided with paid and unpaid leave benefits to support them and their family and enhance financial security. Paid time off accrual rates for full-time employees = 16 hours of annual leave per month and 10 hours of sick leave per month. Employees also receive paid time off for 11 legal holidays, jury duty, and bereavement

leave. CSU's Commitment to Campus offers employees a healthy work-life balance through a wide variety of programs, discounts, and special benefits. This includes Employee Study Privilege (nine free credits per year available through CSU, CSU Global, CSU Online Plus, and University of Northern Colorado), Family Tuition Scholarship Program (50% reduction in tuition), Discounted Veterinary Care, Wellness Membership Discounts, Volunteers in Public Schools Leave Program, Athletic Ticket Discounts, and much more! Visit www.facultyandstaff.colostate.edu to learn more about working at CSU. This information is a summary of commonly used leaves and is not all inclusive of benefits offered at CSU.

Position Summary

The individual in this position will help design, develop, test, and refine applications in the Amazon Web Services (AWS) cloud architecture for the FWT. The FWT is a team that conducts experiments testing the readiness of prototype fire weather tools and software for operational implementation. In addition to setting up and maintaining the cloud environments, this individual will work with outside organizations to install their tools and software for testing and, where necessary, assist in implementing and developing the FWT cloud platform. This includes working with various operating systems, meteorological and environmental data sources, and third-party software packages. The individual in this position will ensure the availability of installed software during FWT experiments. This position reports to the Deputy Associate Director.

This position will be classified as Research Associate II or III according to the credentials of the finalist selected for hire as follows:

- For position title Research Associate II: Bachelor's degree in computer science, software engineering, or a related technical field PLUS 3-4 years of relevant work experience –OR– Master's degree in computer science, software engineering, or a related technical field experience
- For position title Research Associate III: Bachelor's degree in computer science, software engineering, or a related technical field PLUS 5 or more years of relevant work experience –OR– Master's degree in computer science, software engineering, or a related technical field PLUS 2 or more years of relevant work experience –OR– Ph.D. in computer science, software engineering, or a related technical field.

Decision Making

Decision making depends on the analysis of the user requirements, software architecture constraints, or technical issues involved with each software build and update. The chosen implementation approach may need to be selected from many alternatives. The individual in this independent position will work and coordinate with FWT and WIDS management once a week in a brief meeting to go over progress and possible enhancements to the overall cloud architecture development work to align with product releases. The individual in this position will set priorities that correspond to importance and/or urgency of particular upgrades and other work activities.

Essential Job Duties

Applications Development and Administration– 80%

- Install and adapt third-party software applications to be cloud native or to run in a cloud environment, including data feeds and access controls.
- Develop and provide cloud architecture and implementation for the FWT.
- Assist with the management and administration of FWT systems in the cloud.
- Work with other systems engineers, cloud specialists and security experts to develop and deploy scalable solutions while meeting NOAA security boundary requirements.
- Work closely with OAR, ESRL, and GSL management, security, cloud engineer, engineers and scientists to develop technical and business requirements that must be met in deployments.

Leadership – 10%

- Provide knowledge, guidance, expertise, consultation, and training on AWS Cloud Services.
- Lead the team to help implement solutions in the cloud for the FWT experiments.
- Suggest software and overall architectural design changes to improve FWT implementation in the cloud.

Documentation and Reporting – 10%

- Complete annual reports documenting the status of the project.

- Summarize research results for sponsors and the broader weather community.
- Prepare software documentation in collaboration with other team members.

Required Qualifications

In your cover letter, please specifically address EACH required qualification as it relates to your experience. A cover letter that fails to address the required qualifications for this position may not be considered further after review by the search committee.

For position title Research Associate II

- Bachelor's degree in computer science, software engineering, or a related technical field PLUS 3-4 years of relevant work experience
- –OR– Master's degree in computer science, software engineering, or a related technical field experience

For position title Research Associate III

- Bachelor's degree in computer science, software engineering, or a related technical field PLUS 5 or more years of relevant work experience\
- –OR– Master's degree in computer science, software engineering, or a related technical field PLUS 2 or more years of relevant work experience
- –OR– Ph.D. in computer science, software engineering, or a related technical field.
- Experience with Cloud, specifically Amazon Web Services and cloud-native development.
- Must be a citizen of the United States or Lawful Permanent Resident with a physical USCIS “Green Card.”
- Ability to pass a National Agency Check with Inquiries (NACI) federal background check and receive a NOAA Common Access Card (CAC) ID badge.

Desired Qualifications

In your cover letter, please specifically address the applicable preferred qualifications for this position. A cover letter that fails to address the preferred qualifications for this position may not be considered further after review by the search committee.

- Familiarity with object-oriented concepts and design principles.
- Experience with Infrastructure as Code (IaC) such as Terraform or AWS Cloud Formation.
- Experience in AWS with the following services (IAM, SQS, SNS, EC2, EKS, EBS, EFS, Lustre, S3, Lambda, RDS, AWS cli, and boto3/java AWS SDK).
- Experience with containerized systems such as Docker.
- Experience with Kubernetes or Elastic Kubernetes Service (EKS).
- Experience with issue tracking and revision control.
- Experience with continuous integration.
- Experience with Python.
- Experience developing software in a Linux environment.
- Experience setting up your development environment using an Integrated Development Environment (IDE) such as Eclipse or Visual Studio.
- Experience with Linux operating systems such as Red Hat, CentOS, Centos/Redhat OS.
- Familiarity with National Weather Service forecasting systems (AWIPS-II, Graphical Forecaster Editor, WarnGen)

Annual Salary Range: Commensurate with experience and qualifications as follows:

- Research Associate II: \$100,000 - \$110,000
- Research Associate III: \$110,000 - \$120,000

Background Check

Colorado State University strives to provide a safe study, work, and living environment for its faculty, staff, volunteers and students. To support this environment and comply with applicable laws and regulations, CSU

conducts background checks. The type of background check conducted varies by position and can include, but is not limited to, criminal history, sex offender registry, motor vehicle history, financial history, and/or education verification. Background checks will also be conducted when required by law or contract and when, at the discretion of the University, it is reasonable and prudent to do so.

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 Details

Applications must be submitted via online portal. We will not accept materials sent via email or other mode. **NOTE:** In your cover letter, please specifically address the required and preferred qualifications of this position. A cover letter that fails to address the qualifications of this position may not be further considered after review by the search committee. Likewise, an online application with a generic cover letter or missing a cover letter, and/or an application that does not include current/correct reference contact information may not be further considered after review by the search committee.

CSU is committed to full inclusion of qualified individuals. If you need assistance or accommodations with the search process, please reach out to the listed search contact.

To apply, please upload a cover letter that addresses the required and preferred job qualifications, a resume, and the contact information for three professional references. References will not be contacted without prior notification to candidates.