Research Scientist – AI/ML for MPAS–JEDI based Warn-on-Forecast System

Overview

The Cooperative Institute for Severe and High-Impact Weather Research and Operations (CIWRO) seeks to fill a Research Scientist position to work collaboratively with the NOAA National Severe Storms Laboratory (NSSL) in Norman, Oklahoma. This position will contribute to NOAA's Warn-on-Forecast (WoF) program (https://wof.nssl.noaa.gov/), housed in the National Weather Center in Norman, Oklahoma (https://www.ou.edu/nwc). A successful candidate will advance next-generation WoF System (WoFS) by integrating machine learning (ML) and deep learning (DL) into Model for Prediction Across Scales–Atmosphere (MPAS-A) dynamical core and the Joint Effort for Data Assimilation Integration (JEDI) to develop hybrid AI–Numerical Weather Prediction (NWP) methods that improve forecast performance.

Job Responsibilities

As a CIWRO Research Scientist supporting WoFS development, you will:

- Contribute to the design, implementation, and testing of AI/ML and deep learning approaches relevant to ensemble data assimilation and storm-scale prediction in MPAS–JEDI-based WoFS.
- Explore hybrid AI–NWP and AI/ML enabled data assimilation workflows that combine data-driven approaches with physics-based numerical models.
- Develop and evaluate ML-based bias correction, calibration, and improved uncertainty representation in ensemble forecasts, and verify performance against baseline or operational configurations.
- Lead and contribute to peer-reviewed manuscripts and present results at conferences, workshops, and project meetings.
- Collaborate with scientists to transition research advances into testbed-ready guidance and experiments.

Required Qualifications

We are looking for candidates who have:

- A PhD in Atmospheric Science, Meteorology, Data Science, or a related field.
- Experience with numerical weather prediction or data-driven modeling.
- Experience in programming languages such as Python, and experience working in high-performance computing (HPC) and/or cloud-computing environments.
- Ability to work effectively in a collaborative, multidisciplinary research environment, with strong written and verbal communication skills.

Preferred Qualifications

The ideal candidate will also have one or more of the following:

- Experience with numerical weather prediction modeling and data assimilation (e.g., ensembles DA methods).
- Hands-on experience with ML/DL frameworks (e.g., PyTorch, TensorFlow, JAX), especially for scientific or spatiotemporal data.
- Experience developing, running, or analyzing MPAS, JEDI, or similar community modeling/DA systems.

Benefits and Work–Life Balance

Joining our team comes with numerous benefits, including:

- Competitive salary based on experience and comprehensive university benefits (http://hr.ou.edu/).
- Generous paid leave, encompassing 14 paid holidays and 22 hours of accrued paid time off per month.
- Reduced membership at the University of Oklahoma's state-of-the-art fitness and aquatic center (https://www.ou.edu/far).

More details about working at the University of Oklahoma, benefits packages, as well as living in Norman, Oklahoma are provided on our website: https://jobs.ou.edu/Discover-OU.

We are dedicated to promoting a healthy work–life balance by championing a flexible work culture, offering adaptable work hours and a hybrid work arrangement. This framework enables team members to navigate personal commitments while effectively contributing to their professional responsibilities.

How to Apply

Applications should be emailed to ciwro-careers@ou.edu, Attn: MPAS-AIML, and include:

- A cover letter
- The names and contact information for three references
- Your résumé/CV

The cover letter must highlight your interest in the position and describe how you meet the position qualifications. Applications will be accepted until the position is filled. The starting date is negotiable.

The University of Oklahoma is an Equal Opportunity/Affirmative Action employer.