Research Scientist – Artificial Intelligence Enhanced Warn-on-Forecast System

Position Description

The Cooperative Institute for Severe and High-Impact Weather Research and Operations (CIWRO) at the University of Oklahoma is seeking a Research Scientist to help improve how we predict severe weather using artificial intelligence (AI) and machine learning. This position supports the National Oceanic and Atmospheric Administration's (NOAA) Warn-on-Forecast program, which aims to provide earlier and more accurate warnings for tornadoes, severe thunderstorms, and other hazardous weather events. The successful candidate will help develop and test new approaches that combine traditional weather prediction models with AI and machine learning. The goal is to improve forecast accuracy, better communicate uncertainty, and make weather prediction systems faster and more efficient. The position is located at the National Weather Center in Norman, Oklahoma. The scientist will work closely with researchers at the National Severe Storms Laboratory and the University of Oklahoma.

Overview

Our team is developing the next generation Warn-on-Forecast System, an advanced weather prediction system designed to help forecasters anticipate severe storms before they occur. We are exploring how AI and machine learning can improve several parts of the prediction process, including how weather observations are incorporated into models, how forecast guidance is generated, and how the likelihood of severe weather is estimated. This position offers opportunities to conduct original research, collaborate with experts in weather science and AI, and help turn promising research into practical tools that support weather forecasting and public safety.

Key Responsibilities

- Develop and test AI and machine learning methods to improve severe weather prediction, including hybrid ensemble forecasts that combine physical and AI models.
- Improve ensemble design, generation, uncertainty representation, and computational efficiency using emerging AI and machine learning techniques.
- Explore AI and machine learning applications in model physics, bias correction, post-processing, and probabilistic severe weather guidance.
- Lead independent research aligned with Warn-on-Forecast priorities, including publishing peer-reviewed findings and developing competitive research proposals.
- Provide scientific leadership and coordinate collaborative research to advance the Warn-on-Forecast System.

Qualifications

- Ph.D. in Atmospheric Science, Meteorology, Computer Science, Data Science, or a related field.
- Experience with Python or a similar scientific programming language.
- Ability to work effectively with researchers from different scientific and technical backgrounds.

Candidates with experience in one or more of the following areas are encouraged to apply. Experience in all areas is not required.

- Artificial intelligence or machine learning, including experience with tools such as PyTorch.
- Experience with Artificial intelligence or machine learning methods for geophysical applications, numerical weather prediction or data-driven modeling.
- Experience with data assimilation concepts.

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 15 paid holidays and 22 hours of paid time off per month.
- Reduced membership rates at The University of Oklahoma's state-of-the-art fitness and aquatic center (https://www.ou.edu/far).

How to Apply

Applications should be emailed to ciwro-careers@ou.edu, Attn: WoFS AI, 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.