MMM SEMINAR SERIES

Exploring NWS Forecasters' Assessment of AI Guidance Trustworthiness

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As artificial intelligence (AI) methods are increasingly used to develop new guidance intended for operational use by forecasters; it is critical to evaluate whether forecasters deem the guidance trustworthy. Past trust-related AI research suggests that certain attributes (e.g., understanding how the AI was trained, interactivity, performance) contribute to users perceiving the AI as trustworthy. However, little research has been done to examine the role of these and other attributes for weather forecasters.

This seminar will highlight the theoretical and applied AI trustworthiness research efforts of the Risk Communication team from the NSF AI Institute for Research on Trustworthy AI in Weather, Climate, and Coastal Oceanography (AI2ES), with specific focus on a study regarding AI-derived guidance for severe convective weather and forecasters. For this particular study, we conducted 16 online interviews with National Weather Service (NWS) forecasters to examine (a) how they make guidance use decisions, and (b) how the AI model technique used, training, input variables, performance, and developers as well as interacting with the model output influenced forecasters' assessments of trustworthiness of new guidance. The interviews pertained to either a random forest model predicting probability of severe hail or a 2D-convolutional neural net model predicting probability of storm mode. When taken as a whole, our findings illustrate how forecasters' assessment of AI guidance trustworthiness is a process that occurs over time rather than automatically or at first introduction. We recommend developers center end users when creating new AI guidance tools, making end users integral to their thinking and efforts. This approach is essential for the development of useful and used tools. The details of these findings can help AI developers understand how forecasters perceive AI guidance and inform AI development and refinement efforts.

Thursday, 20 June 2024, 2:00PM
Refreshments 1:45PM
Please also join colleagues for refreshments and informal discussion after the seminar until 3:30pm
NCAR-Foothills Laboratory, 3450 Mitchell Lane
FL2-1022, Large Auditorium
Seminar will also be live webcast
https://operations.ucar.edu/live-mmm
Participants may ask questions during the seminar via Slido.