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Preventing, Identifying, and Managing Bias in AI

The National Institute of Standards and Technology (NIST) released in June a "draft special publication," NISTIR 1270, entitled "A Proposal for Identifying and Managing Bias within Artificial Intelligence." This addresses issues that affect the reliability of AI, but also the trust that society places in it, including the fact that a machine learning model may have been trained using a data set that was itself tainted by a history of purely human bias (think for example of historical data about which loans were approved or denied by a bank, where the race or gender of the applicants was a factor in those decisions).

The document is 30 pages long, but its substance is on pages 1-13 (pages 7-19 of the PDF). The core of the proposal is a list of bias prevention activities that should be included across three stages: pre-design, design and development, and

deployment of an AI-based application.

Appendix A (pages 14-16) contains a classification of 37 (!) types of bias, derived by the authors from an extensive review of the literature on the subject (there are 142 references in the last section).

Thanks to Clayton Pummill for alerting us to this news.

→ SPE's Digital Energy Coffee Chat

After two successful "coffee chats" in May and June, the Society of Petroleum Engineers (SPE) will host another one on July 29 at 7:30 PDT / 10:30 EDT / 14:30 GMT with Philippe Hervé, VP Energy at SparkCognition. The subject will be "AI for Predictive Maintenance, Safety and Sustainability." The event is free and you can register here. Claude Baudoin will moderate the conversation.

Do you have a story to tell or thoughts to share about digital transformation in the energy industry? Let us know if we can add your name to our waiting list of future guests!

→ The Dark Web Demystified

Plunge into the secrets of the Internet's evil actors with this video from *Recorded Future:*
"In this on-demand session, Charity Wright, a former NSA analyst and current Expert Cyber Threat Intelligence Analyst at Recorded Future, pulls back the curtain. In this tour of the dark web, we'll bust myths associated with the criminal underground and demonstrate how you can collect and analyze pertinent intelligence to stop threat actors at the earliest stages of attack."
Register here to receive a link to the recording.

→ Ransomware Risk Management

The National Institute of Standards and Technology (NIST) released a preliminary draft of NISTIR 8374, "Cybersecurity Framework Profile for Ransomware Risk Management." The public comment period has ended, but there will be "at least one additional public comment period before final publication." The web page includes a link to the PDF of the document, and an e-mail address for questions.

In addition to the concerns about preventing, managing, and recovering from ransomware attacks, enterprises should be aware that ransomware payments may expose them to sanctions, especially in the U.S., if the hackers reside in countries that are under trade sanctions. The victims may therefore find themselves caught between a rock and a hard place. Attackers often demands sums that are moderate by corporate standards, hoping that the companies will find it cheaper to pay than to fight. Guidance from the U.S. Treasury Department can make it impossible to take that easy way out, thus extending the disruption.

Remote Software Deployment to Vehicles

The Industrial Internet Consortium (IIC) has approved the "Go, Kart!" testbed to demonstrate vehicle connectivity, including the capability to deploy software updates "over the air." Connectivity solutions include visible light communication (Li-Fi), Wi-Fi, 5G and even 6G in the future. The project was started by aicas, an embedded software solutions provider out of Karlsruhe, Germany, and AASA, an IT services small business based in Virginia. It is also supported by Linaro, an association devoted to embedded software development on the Arm architecture.

Seen Recently...

"It used to be my funniest meetings were with people who had developed a software application and were therefore SE researchers. These days, it's people who have used PyTorch and are now ML researchers."

-- Richard Paige, Professor of Software Engineering at McMaster University