FROM THE EDITOR'S DESK

JSS Technical Editor | C.G. Muniak Ph.D.

AI TOOLS FOR SYSTEM SAFETY ANALYSIS?

It was not long ago that there were reports of students using AI applications to write assignments for school. Now it is common for engineers to use AI applications to help with engineering analyses and even to generate software. Some people are concerned as there are cases where AI makes up answers to questions (referred to as hallucinations). There are also situations when it is not clear how the model arrived at a particular answer. To be fair, I seem to remember some analyses generated by full blooded human beings that seemed to have made up answers and difficult to understand conclusions.

The first technical paper in this issue is "Augmenting an Incident Dataset with ChatGPT" by Jon Ricketts. The author uses a GPT model and rather than training it on even more labelled data it is further trained using human feedback, through reinforcement learning. This approach reduces some of the aforementioned problems with AI.

The second technical paper is "Reduction of Normalization of Deviation (NoD) Using a Socio-Technical Systems Approach" by Xidong Xu, Ph.D.; Richard Gardner, MS; Masood Karim, MS; Anthony Mixco, Ph.D., Mohammad Mojtahedzadeh, Ph.D.; John Palmer; Tom Sultze, MS; and Xiaoxi Wang, Ph.D.; David Jackson, MS; Mathieu King; Sam Chen; Xiaoyu Hu; Dennis Lee; Rey Tang; Jay Wang; Wei Yang, MS; Tim Zhu and Jibo He, Ph.D.

This paper describes a model developed by Boeing; this general systemic model of NoD (normalization of deviance) is based on a socio-technical systems approach. It is a representation of how multiple internal and external factors inherent to socio-technical systems interact in a dynamic fashion leading to NoD.

The TBD article by Charlie Hoes "Hydrogen versus Lithium Batteries for Energy Storage" describes the pros and cons of using hydrogen as an energy storage material.

Editor's Note: I apologize for the interruption in the publication schedule of the JSS. I believe that we are now back on track for a more normal frequency of JSS deliveries.