Ethics of Implementing Machine Learning using Industry 4.0 Concepts in Aerospace and Defense Industries

Lina Khan
Doctoral Student, Department of Industrial Engineering and Management Systems
University of Central Florida
Orlando, Florida, USA
linakhan@knights.ucf.edu

Abstract

With increased advances in Industry 4.0 technologies, specifically Artificial Intelligence (AI) and Machine Learning (ML) systems, there is a paralleled need to evaluate the ethics behind their development and usage. This article briefly illustrates the increasing need for approved policies guiding the development of ethical intelligent machines by detailing the ongoing discussions on ethical responsibilities and challenges. In addition, the emerging need for cohesive integration with humans is explained and reiterates the requirement for a unified strategy within defense sectors.

Keywords
Ethics, Machine Ethics, Industry 4.0, Defense, Aerospace

Lina Khan Lina Khan currently serves as a Systems Engineer working the Future Vertical Lift initiative and focused Model Based System Engineering efforts in support of the United States Army. Within the Aerospace and Defense (A&D) industry, she has also held critical roles in the Strategic Missile Defense sector supporting the United States Navy. These roles include program management, engineering, and operations. She continues to pursue methods which ensure strategic growth and execution. Based on her industry experiences, she has chosen to pursue a doctoral degree with an Industry 4.0 research area. The potential contributions of this research relate to defining critical success factors and developing a strategic framework for implementing Industry 4.0 technologies within the A&D Industry.