

University of Essex

MSc Artificial Intelligence

Module: ML_PCOM7E July 2025 B

Unit 1: Collaborative Discussion – The 4th Industrial Revolution

Initial Discussion

At my company, I develop a variety of internal software systems for tracking work orders, vendor payments, and media asset files, including integrations between software platforms built by other company work groups and by outside vendors.

The resilience and human centricity aspects of Industry 5.0 are consistently relevant to my work, especially where data input is concerned. Resilience in this context, in particular, refers to the ability of a software system to adapt to changing usage patterns and to respond appropriately to unexpected behavior by human users (Alves, Lima and Gaspar, 2023).

For example, a form field may appear to a non-technical end user to allow any alphanumeric character or special character available on a standard keyboard. From the end user's perspective, that's an entirely reasonable assumption to make. What the end user doesn't typically know is that depending on the type of data being processed, and the disparate software platforms that data may need to pass through, what appears to be a valid input instead can cause system integration breakdowns.

A good example from recent experience involved an end user of a billing software platform entering greater than (">") and less than ("<") symbols into a text field in a form. Those special characters, however, were not recognized by the secondary software that ingested the form into an archiving system, which – in turn – acted as one of the data sources for several other asset management platforms. What appeared to the end user as an unremarkable bit of data entry was, instead, the cause of a ripple effect of derivative system errors.

In this example, there was no loss and no damage done – the error was caught and remediated right away – but it highlights the fragility of interconnected data processing systems that the concept of resilience in Industry 5.0 is intended to ameliorate.

Reference

Alves, J., Lima, T.M. and Gaspar, P.D. (2023). Is Industry 5.0 a Human-Centred Approach? A Systematic Review. *Processes*, 11(1), p.193.
doi:<https://doi.org/10.3390/pr11010193>.