

Editorial



Artificial intelligence (AI) is becoming a part of everyday engineering practise Across industries engineers are expected to use AI to analyse the information, generate solutions, automation, to identify patterns, improve productivity and reduce cost and time. For engineering graduates entering industry, the knowledge of AI usage is therefore the most desired professional capability in today's era. However, there is an important tension lying within this transition. Industry is expecting graduates to make an effective use of AI, but they do not want AI to make the final decision. When an AI generated design fails, safety recommendation proves inadequate, a business decision has unintended consequences, or an algorithm makes a biased outcome, the question remains **who is accountable?**

The workplace of the future is unlikely to be one in which engineers compete with AI. It is more likely to be the one in which engineers make optimum use of AI. An engineer may use an AI system to examine thousands of data points in seconds, suggest alternative designs, identify potential faults, write code or simulate possible outcomes. These capabilities can significantly enhance human productivity, but the engineer must still determine whether the information generated by the system is reliable. They should check whether the assumptions made behind it are appropriate and whether the proposed

solution makes sense in that industry specific context. This gives us a new picture of the expectations from passing out engineering graduates. It is important for them to know how to operate an AI tool, but that is not sufficient. Engineers are expected to understand when to trust AI, when to question it and when not to use its recommendations at all. This becomes particularly important when decision making have consequences beyond efficiency or profitability. This may affect safety infrastructure, the environment privacy, or livelihoods in human life. An AI system can recommend a course of action but it cannot carry professional responsibility in the way an engineer organisation or an institution can. The engineer therefore remains at the centre of judgement and accountability. And henceforth, for engineering educators the challenge is to develop engineers who are AI capable without becoming AI dependent. Hence, this has direct implications for engineering education. Students should be given opportunities to use AI in solving authentic engineering problems but they should also be required to explain, verify, challenge and different resolutions produced with AI assistance. Assessment should focus not only on the final Answer but, should examine the reasoning behind it. The quality of the questions moves to AI and the verification of its output, and the students ability to take responsibility for the final decision. Hence the most important competency for an AI enabled engineer is professional judgement. Technology will continue to change, the tools available to engineers will change with it but the responsibility to make decisions will always remain human. Thus, the future engineer is the one **who uses AI as a powerful assistant while retaining human judgement, professional responsibility and accountability for the decisions that matter.**

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