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The art of smart – Assessing the appropriate levels of intelligence in automation systems

The next wave of automation and robotics is benefiting from adding more 'intelligence' to the systems deployed. The continuing decrease in cost and increase in processing power and sensor capability is leading a drive to smarter and smarter automated systems. However, there is a balance point between not smart enough and too smart.

This presentation will focus on three key elements:

- What are the new capabilities and applications for the new smarter industrial and service robots?
- What are the costs and potential problems introduced by these new artificial intelligence applications?
- How does a systems engineer or designer determine how smart is smart enough?

Like any other engineering decision, there are trade offs that lead toward an optimal design choice. Adding intelligence to an automated system is no different. However for many designers and engineers with the responsibility to make these critical decisions, there are no good 'best practices' that can be applied. This often leads to decisions being made based on the input from the vendors alone, and this input is targeted towards the upper end of the decision space. I will present solid 'hands on' tools for narrowing down the decision space to what is appropriate for the given problem. These tools will enable the responsible engineer to make solid 'best practices' choices when looking at "How smart is smart enough?"

Biography

James P Gunderson has completed his PhD from the University of Virginia in 2003. His research has focused on Artificial Intelligence and the effective application of the same in automated systems and robotics. He has focused on Artificial Intelligence applications for over 30 years, and been part of two successful robotics/automation start-ups. He is the Growth Director for GunderFish LLC., which focuses on integrating cutting edge AI and predictive analytics with existing business flow. He has published more than 25 papers in journals and conferences.

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