

System-level control for manufacturing systems: Leveraging data for improved quality and resiliency

Manufacturing systems today produce large amounts of data, from the low-level sensors on the plant floor, through machine level control, the plant schedules, extending down the supply chain and even out to the customer. The level of automation is also increasing, saving human workers from heavy, repetitive and/or dangerous tasks and allowing them to focus on larger system-level performance issues. The opportunity exists to leverage this data to improve the quality of the parts produced, while also increasing the resiliency and flexibility of the manufacturing system. In this presentation, we will discuss how “digital twins” can help the operators better understand the workings of the system on the factory floor. Operators working together with automation can create resilient systems that successfully respond and adapt to disturbances and other environmental changes. Examples will be given to illustrate the results.