Murphy’s Law and What Computer Scientists Can and Must Do About It

Abstract

The rapid adoption of microcontrollers and computer-based systems in today’s control systems comes with many advantages, for example, better fuel utilization for engines and a more efficient power-grid. It also brings with it many risks, for example, the difficulty of demonstrating that software or firmware is correct and the susceptibility to network-based malicious attacks. In this presentation I will introduce details on these risks and some of the related issues and approaches that I believe all engineers must consider when designing and developing these systems.

Bio

Daniel Conte de Leon is an assistant professor of Computer Science at the University of Idaho, in Moscow, Idaho, U.S.A. His background is on software engineering for high assurance systems. His research interests and expertise are in the development of methods and tools for the design, construction, and maintenance of high assurance and critical computing systems and critical infrastructure protection systems. His teaching experience comes from several years of teaching across the Computer Science curriculum. He is a member of the ACM and the IEEE.