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Lunabotics Computer System Analysis

An interdisciplinary engineering team tasked with building a robot for competitive performance must coordinate and integrate its design decisions to assure a functional and durable final product. To better assess these decisions and their outcomes, each component and subsystem must be thoroughly vetted prior to committing resources to its development and deployment. At this stage, analysis of successes and failures of past designs serves as a valuable guide. With high team turnover each year, these resources exist primarily in the form of faculty advisor experience. This project uses an informed perspective to look back and analyze the design and development of the current Lunabotics computer system, to identify the strengths and weaknesses of components, and to learn from experience. The presentation details the research and analysis that lead to design decisions for the three primary components of the computer system: locomotion, vision, and autonomy. The summary evaluates the effectiveness of this process in light of the performance of the robot within a test environment.