

Robots, Software, Mayhem?

Towards a Design Methodology for Robotic Software Systems

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The development of autonomous robotic systems has experienced a remarkable boost within the last years. Away from stationary manufacturing units, current robotic systems have grown up into autonomous, mobile systems that not only interact with real world environments, but also fulfill mission critical tasks in collaboration with human individuals on a reliable basis. Therefore, today's robotic systems can be described as highly reactive, inherent parallel, distributed real-time systems. Our work aims at an improved software development methodology, that on the one hand allows high level development of certifiable robotic software, but on the other hand is capable of synthesizing optimized low-level code for robust concurrent real-time environments.