Representation and Analysis of Reactive Behaviors: A Synchronous Approach

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ABSTRACT

Reactive systems involve communication, concurrency and preemption. Few models support these three concepts, even less can correctly deal with their coexistence. The synchronous paradigm allows a rigourous approach to this problem, crucial to reactive systems.

This paper analyzes the underlying hypotheses of the synchronous approach. Reactive behaviors are characterized. A new visual model (SYNCCHARTS) is then proposed. This graphical model is fully compatible with the imperative synchronous language ESTEREL and is specially convenient to express complex reactive behaviors.

FOREWORDS

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