

A Functional Prototype for CPS Systems

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Abstract

In this paper I briefly summarize the descriptions of cyber-physical systems by overviewing general terms, discovering typical approaches for prototypes, surveying some case studies encountered, making connections with distributed systems using executable semantics description for modeling and design.

First, the most common notions and terms are presented for a structural and systematic description of the CPS systems. Second, the survey of some case studies have the goal of looking into methodologies and research evaluations types about CPS systems. Especially the description of fault tolerant and embedded systems [1] are important studies regarding the safe behaviour of CPS systems [2].

The description is presented from the perspective of the applicability in designing and coordinating CPS systems pointing to important features considered relevant for defining prototypes of CPS systems using executable semantics approach [3]. The paper includes significant research steps taken for describing the semantical modeling and the design of CPS systems. Conclusions are drawn regarding the analyses and definitions considered when modeling CPS systems.

Keywords: cyber-physical systems, distributed and functional programming

MSC: C.2.4

References

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