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IEEJ Transactions on Electrical and Electronic Engineering

Special Issue on “The Convergence of Embedded Systems and Software-Related Microarchitectural Aspects”

A microcontroller is a hardware and software combination designed for a specific function. Furthermore, an integrated operating system also functions as a component of a larger infrastructure. The gadgets may be limited to particular tasks or be changeable. An integrated system is a framework built on a circuit or microchip and meant to perform a certain task. For contrast, a fire detection system is a technology that constantly monitors burning. The computational machinery that enables the execution of a central processing unit is known as a "microarchitecture." It consists of all logic circuit components, including registrations, memories, combiners, and arithmetic units. Collectively, these components make up the microprocessor. Every computational division's efficiency, details, and microarchitecture all depend greatly on it. For all data-related internal and external activities, it serves as an expressive monitoring system.

The necessity to meet exact scheduling specifications, frequently with limiting factors, distinguishes a significant category of microcontrollers from summary personal computers. Constructions whose temporal constraints may be assured and predetermined is the challenge of dependable software architecture. The ability to comprehend information in ways that allow previously unheard-of discoveries for judgement call, either by a human or a computer, is a significant benefit of incorporating artificial intelligence (AI) and machine learning (ML) approaches within navigation. Technological methods can have beneficial effects on society when they're combined with malware technologies like unmanned aircraft systems (UAS). The benefits of these methodologies should be weighed against the necessary standards for protection and wellbeing in order for the organization as a whole to guarantee an adequate amount of safety in both consumer and industrial applications.

In order to ensure behavior validation for autonomous complexities involved in operations of different configurations, the above issues discuss the existing and new methodologies. In a preparation of a variety procedure, behavior certification for sophisticated autonomously processes is being investigated upon. Electricity demand is closely correlated with both the rising need for processing capabilities. Energy conservation researchers have generally concentrated on lowering equipment electricity consumption. Current research demonstrates that using efficient and scalable formats, code review, simultaneous and approximation computing, system software interpreters, and various programming languages may dramatically improve energy consumption. Additionally, the use of electricity network monitoring and standards helps enlighten computer programmers and increase developers' understanding of energy use.

We encourage unique research that addresses the confluence of embedded systems and software-related microarchitectural concerns for this Special Issue.

Please note that the manuscript may be published not as a Special issue paper in the Special issue but as a general

paper in a TEEE(C), if the manuscript is not accepted by the deadline of publishing for the Special issue.

IMPORTANT IMFORMATION

Special Issue:	IEEJ TEEE C, Vol.20, Issue 4, 2025
Deadline of paper submission:	May 27, 2024
Submission method:	Submissions are accepted via the paper management system. Please visit the following website for electrical submission: https://submit.iee.or.jp/main/cgi/sstk-top.cgi.

NOTES

1. Follow the IEEJ paper submission guide (https://www.iee.jp/pub/contribution_guide/) in preparing papers.
2. In submitting papers, select "TEEE C(Electronics, Information and Systems)" on the " Paper, Technical Note and Letter Submission" screen of the paper management system, and then select the manuscript type (either paper or letter). In addition, select "The Convergence of Embedded Systems and Software-Related Microarchitectural Aspects" from special issue theme.
3. The submissions by e-mail or postal mail will not be accepted.
4. Papers that cannot be published in the special issue due to peer review or the number of submissions are treated as general papers.

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