

# 学术报告会

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## Embedded Systems for IoT and Edge Computing, Architectures and Applications

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### 摘要:

Embedded systems play a fundamental role for the deployment of IoT / edge computing solutions. The ever-growing number of application domains where these solutions can be advantageously used ranges from personal sports gadgets to complex industrial systems. This variety of domains comes with very diverse data management and computation requirements for embedded systems, from basic processing solutions to complex artificial intelligence-based ones. Generally speaking, “low” power consumption, complexity, size, and cost have to be combined with “powerful” measurement, processing, and communication capabilities. But what “low” and “powerful” mean is strongly application-dependent, so the choice of the embedded device to be used must be carefully considered. This presentation will first briefly introduce current embedded hardware architectures, including heterogeneous devices, emphasizing their main characteristics. The second part of the talk will describe real solutions where different architectures are used, showing their practical usefulness depending on the specific application.

### 简介:

Juan Jose Rodriguez-Andina (IEEE Fellow, IEEE工业电子学会候任主席, IEEE-TIE共同主编) received the M.Sc. degree from the Technical University of Madrid, Spain, in 1990, and the Ph.D. degree from University of Vigo, Spain, in 1996, both in electrical engineering. He is a professor with the Department of Electronic Technology, University of Vigo and also with the School of Electronic and Information Engineering, Ningbo University of Technology. His current research interests include the implementation of complex control and processing algorithms and intelligent sensors in embedded platforms. Prof. Rodriguez-Andina has authored over 180 journal and conference articles, and holds several Spanish, European, and US patents. He is co-author of the articles that received the 2023 IEEE Transactions on Industrial Electronics Outstanding Paper Award and the 2017 IEEE Industrial Electronics Magazine Best Paper Award. He received the 2020 Anthony Hornfeck Award from the IEEE Industrial Electronics Society (IES). He is the 2024-2025 IES President-Elect. From 2016 to 2021 he was IES Vice President for Conference Activities. He served as Editor-in-Chief of the IEEE Industrial Electronics Magazine (2013-2015) and as Associate Editor of the IEEE Transactions on Industrial Electronics (2008-2018). He is currently serving as Associate Editor of the IEEE Transactions on Industrial Informatics and the IEEE Open Journal of the Industrial Electronics Society. From January 2024, he will serve as Co-Editor-in-Chief of the IEEE Transactions on Industrial Electronics.