

## **SBESC 2019 Preface/Welcome Message**

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On the behalf of the Organizing Committee, I are pleased to welcome you to the IX Brazilian Symposium on Computing Systems Engineering (SBESC 2019) that occurred from November 19 to 22 in Natal/Rio Grande do Norte. Since its creation in 2011, SBESC has rapidly become a premier forum in Brazil devoted to discuss both theoretical and practical aspects in Computing Systems Engineering, an area covering complementary fields of knowledge whose focus is on engineering and implementing suitable infrastructure for supporting emerging applications. Indeed, mobile and/or embedded systems are virtually found everywhere nowadays. Automation in industry is massively adopting computer-based services. Internet-of-Things, Self-driven Vehicles, Cyber-Physical Systems are establishing new application frontiers where computers play a central role. Advancing in this area requires a multi-disciplinary effort, involving researchers and practitioners from different fields.

SBESC 2019 offers a rich program for the attendees, including technical sessions, tutorials, and keynote talks. The symposium also hosts the 6th Embedded System Competition, with 18 teams selected from presenting their works, out of 25 that started the competition. The 2019 competition organization was in charge of Prof. Edna Barros, UFPE, Prof. Hugo Marcondes, IFSC, and Prof. Monica Pereira, UFRN.

The technical part of the conference has a rich program, thanks to the authors that submitted 123 high-quality papers. From these, 52 papers were selected for the symposium by the Program Committee. The best 34 ranked were selected as full papers, which were further organized in 8 technical sessions. Other 18 papers were selected as Work-in-Progress, organized in 3 short sessions followed by a poster presentation. The Program Committee Co-Chairs, Prof. Francisco Vasques (FEUP) and Prof. Marcelo Götz (UFRGS) were in charge of successfully setting up the technical sessions.

This year, thanks to the co-location with LADC 2019, the program included five keynote talks. The first keynote was given by Prof. Marco Vieira from University of Coimbra, Portugal, with the title “Advances on the Detection of Software Vulnerabilities”. The second keynote speaker was Prof. Bjorn Andersson from the Software Engineering Institute at Carnegie Mellon University, USA, with the title “Timing Analysis of Software Executing on Undocumented Multicore Processors”. The third keynote was entitled “Advances In System Isolation For Cyber Attack Mitigation”, and was given by Prof. Christophe Bobda from University of Florida Gainesville, USA. The fourth keynote was by Ricardo Moraes from EMBRAER S/A, Brazil, with the title “Earliest Systems Engineering Activities considering Software Architects – EMBRAER Systems Engineering Process”. The fifth and last talk was by Prof. Luis Gomes from University NOVA Lisbon, Portugal, with title “Rapid Prototyping of Embedded Controllers Relying on Model-Based Development”.

The program of SBESC 2019 also includes three short tutorials, which occurs in the context of the Embedded Systems School (ESSE). They have the aim of presenting current developments and new concepts related to SBESC in a way that is accessible to graduate and undergraduate students. The first tutorial was by Prof. João Marcelo Teixeira, UFPE, with title “Computação de alto desempenho na ponta: construindo aplicações de IA com a NVIDIA Jetson Nano”. The second tutorial was by Fernando Silvano Gonçalves, IFSC, with title “Aplicação de Técnicas de Verificação no Processo

de Desenvolvimento de Sistemas Embarcados Críticos”. The third tutorial was by Prof. Marco Aurélio Wehrmeister, UTFPR, with title “Utilizando o Ambiente V-REP e Robot Operating System (ROS) para Simular Sistemas Robóticos que Aplicam VANT do tipo Multi-rotor”. Activities related to ESSE 2019 were coordinated by Prof. Raimundo Barreto, from the Federal University of Amazonas, Brazil.

The general chair, on behalf of all organizing committee members, hope that SBESC 2019 provides a fruitful environment for promoting interesting discussions and collaborations for the attendees, who will also experience a lively and exciting academic campus at the Instituto Metrópole Digital (IMD) of the Federal University of Rio Grande do Norte. The visitors may also take this opportunity in Natal to enjoy a highly hospitable city that offers many attractions.

I look forward to meeting you at SBESC 2019.

Prof. Leandro Buss Becker  
SBESC 2019 General Chair

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Hugo Marcondes (IFSC)

### **Web Chair**

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