

Dr. Saud Wasly



Summary

A computer engineering professor employing creative teaching strategies to enhance the learning experience for students. Actively participating in continued learning through conferences and academic research. Interested in embedded real-time systems including embedded systems architecture, real-time programming languages, real-time operating systems, timing analysis, and architectural simulation. Love and contribute to the open source communities through developing free and open software and hardware designs. Open to crazy ideas that might positively impact the future.

Education

Ph.D. Embedded Real-time Systems, University of Waterloo, 2018
MS. Embedded Real-time Systems, University of Waterloo, 2013
BS. Electrical & Computer Engineering, King Abdulaziz University, 2007

Academic Experience

- **2018 – Present: Assistant Professor at King Abdulaziz University**

Honors and Awards

- First Place Award: The National Scientific Innovation Contest, 2009, for a project in embedded security
- First class medal from the Saudi Society of Scouting for the best scientific researcher (Encryption Methodology)

Institutional and Professional Services

- Director of the Business Incubator at CIE, KAU, [2022-present]
- Head of IT unit, Faculty of Engineering, KAU, [2019-Present].
- Director of the Drone lab, FOE, KAU [2022-Present]
- Vice director for training at the Industrial Automation Labs, KAU, [2020-Present]
- Supervisor of the Electrical & Computer Engineering Club [2022 - Present]
- Head of Saudi Student Association of Waterloo, 2016.
- Development engineer at Jeddah municipality, [2007 - 2008]
- Instructor at Jeddah Center for Scientific Innovation, 2007.
- Member of the first national robotic team, [2006 - 2007]

Patents

- [Scratchpad-based operating system for multi-core embedded systems, 2020](#)

Contact

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Current Research Interests

- Embedded Real-time Systems and Real-time programming languages.
- Real-time traffic monitoring.
- Distributed IoT Systems.
- Embedded Architectural Simulation.
- Embedded AI applications.
- Edge processors' Architecture for AI applications

Selected Publications

S. Wasly, "ERAsim: A Flexible Python-based Architectural Modeling and Simulation Framework", International Conference on Intelligent and Advanced Systems (ICIAS) ,2021.

Xiao-Guang Zhang, Guang-Hong Yang, and Saud Wasly, "Man-in-the-middle attack against cyber-physical systems under random access protocol" in Information Sciences, 2021.

T Garg, S Wasly, R Pellizzoni, N Kapre, "HopliteBuf: Network Calculus-Based Design of FPGA NoCs with Provably Stall-Free FIFOs", ACM Transactions on Reconfigurable Technology and Systems (TREST) 2020.

AM Albishi, SH Mirjahanmardi, AM Ali, V Nayyeri, SM Wasly, OM Ramahi, "Intelligent Sensing Using Multiple Sensors for Material Characterization", Sensors 2019.

S. Wasly and R. Pellizzoni, "Bundled Scheduling of Parallel Real-time Tasks," in Real-Time and Embedded Technology and Applications Symposium (RTAS), 2019.

T. Garg, S. Wasly, R. Pellizzoni, and N. Kapre, "HopliteBuf: FPGA NoCs with Provably Stall-Free FIFOs," in the 2019 ACM/SIGDA International Symposium on Field-Programmable Gate Arrays - FPGA 2019.

R. Tabish, R. Mancuso, S. Wasly, S. S. Phatak, R. Pellizzoni, and M. Caccamo, "A Real-Time Scratchpad-centric OS with Predictable Inter/Intra-Core Communication for Multi-core Embedded Systems," in Real-Time Systems, RTS, 2019.

R. Tabish, R. Mancuso, S. Wasly, S. S. Phatak, R. Pellizzoni, and M. Caccamo, "A reliable and predictable scratchpad-centric OS for multi-core embedded systems," in the Real-Time and Embedded Technology and Applications Symposium (RTAS), 2017.

S. Wasly, R. Pellizzoni, and N. Kapre, "HopliteRT: An efficient FPGA NoC for real-time applications," in Field Programmable Technology (ICFPT), 2017.

R. Tabish, R. Mancuso, S. Wasly, A. Alhammad, S.S. Phatak, R. Pellizzoni, and M. Caccamo, "A Real-Time Scratchpad-Centric OS for Multi-Core Embedded Systems," in the Real-Time and Embedded Technology and Applications Symposium (RTAS), 2016.

Alhammad, S. Wasly, and R. Pellizzoni, "Memory efficient global scheduling of real-time tasks," in the Real-Time and Embedded Technology and Applications Symposium (RTAS), 2015.

S. Wasly and R. Pellizzoni, "Hiding memory latency using fixed priority scheduling," in Real-Time and Embedded Technology and Applications Symposium (RTAS), 2014.

S. Wasly and R. Pellizzoni, "A Dynamic Scratchpad Memory Unit for Predictable Real-Time Embedded Systems," in Euromicro Conference on Real-Time Systems, 2013.