SAL
SILICON AUSTRIA LABS

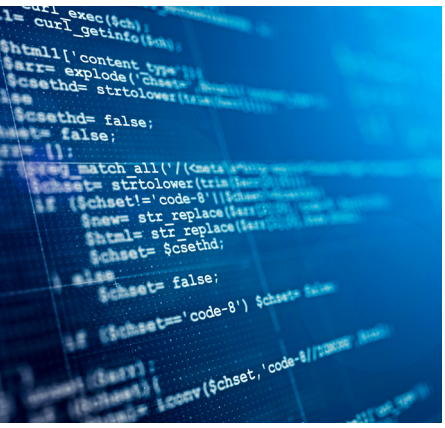
Embedded Systems

At the Core of intelligent electronic based systems.

Using inputs from sensors, flexible connectivity enabled by wireless technology, and relying on the energy provided by power electronics, the embedded division brings it all together: we focus on dependable software and adaptive computation covering conventional designs up to privacy-preserving distributed AI-solutions. In doing so, we design and verify custom algorithms and software and map them most efficiently to hardware, assembling custom compute-accelerators if necessary. Our research is driven by topics of trustworthy AI – including advanced perception – and adaptive & secure software and computation to build the trustworthy, intelligent, and efficient systems of the future.

"Software, algorithms and data-based approaches are the basis to all the advanced functionality offered by modern systems. We not only make this happen but ensure trustworthiness, efficiency, safety, and security."
Willibald Krenn, Deputy Head of Division Embedded Systems

Our Service Portfolio:

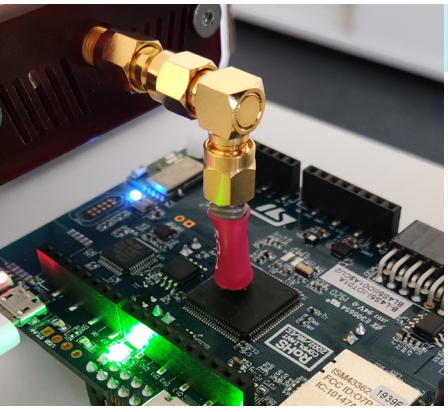


Design, Implementation & Software-Engineering

- System modelling and analysis supported by our formal methods know-how
- Energy efficient, high-performance signal processing and FPGA programming
- AI approaches for control and prediction, virtual sensing, object recognition and tracking
- Distributed data processing in fog- / edge computing environments
- Low-code development

Security, Verification & Testing

- Design and implementation of automated testing & verification methods
- Formal Methods-based verification, e.g., SW-Model-Checking, Model-based Diagnosis and reasoning, Model-based Testing, Symbolic Execution
- Side-channel vulnerability analysis of electronic based systems
- Code Analysis & Reverse Engineering



Key Equipment

- ChipSHOUTER Kit for Fault Injection
- Compute Servers (á 128 nodes, 2 TB RAM, Nvidia A100 GPUs)
- State-of-the-art Compilers, Debuggers, Development Boards

ABOUT SAL

Silicon Austria Labs (SAL) is a top European research center for electronic based systems (EBS). The application-oriented center offers cooperative research & services at three locations – Graz, Linz and Villach – in the pioneering research areas of Sensor Systems, Microsystems, Intelligent Wireless Systems, Power Electronics and Embedded Systems.

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