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Nota di contenuto	-- Architectures for MLOps. -- An Approach for Integrated Development of an MLOps Architecture. -- MLOps in Practice: Requirements and a Reference Architecture from Industry. -- HarmonE: A Self-Adaptive Approach to Architecting Sustainable MLOps. -- Large Language Models in Software Architecture. -- Using Incremental LLM Context for Cost Reduction in LLM-Driven IoT Applications. -- Automated Software Architecture Design Recovery from Source Code Using LLMs. -- Exploring Architectural Smells Detection Through LLMs. -- LLMs for Software Architecture Knowledge: A Comparative Analysis among Seven LLMs. -- LLM-based Quality Assessment of Software Architecture Diagrams: A Preliminary Study with Four Open-Source Projects. -- Architectures for Embedded Systems. -- Nanosatellite Flight Software: A Rigorous Software

Architecture Perspective. -- Towards Mixed-Criticality Software Architectures for Centralized HPC Platforms in Software-Defined Vehicles: A Systematic Literature Review. -- Runtime Monitor Synthesis for Automotive Software Architectures. -- Self-Adaptive, Secure and Federated Learning Systems. -- Model-based Proactive Self-Adaptation for Cloud Systems. -- SAFER-D: A Self-Adaptive Security Framework for Distributed Computing Architectures. -- SURE! A Catalog of Uncertainties and RELAXed Requirements for Self-Adaptive Systems. -- Architecting Federated Learning Systems: A Requirement-Driven Approach. -- Microservice Architecture. -- Centrality Change Proneness: an Early Indicator of Microservice Architectural Degradation. -- A Comparative Analysis of Monolith vs Microservices Energy Consumption. -- Data-driven Understanding of Design Decisions in Pattern-based Microservices Architectures. -- Software Architecture Practices, Perspectives and Evolution. -- Architectural Design Decisions and Best Practices for Fast and Efficient CI/CD Pipelines. -- From Lab to Market: Architectural Evolution in Open Source Transition. -- How do Practitioners Perceive the Relevance of Software Architecture Research?. -- Towards Legal Knowledge Transfer Based on Software Architecture. -- Industry papers. -- WebAssembly with Wasi-NN for Edge Machine Learning Inference: Experiences and Lessons Learned. -- Software Architecture for a Robust, Multithreaded, Realtime, Control System used on an Adaptive Racecar. -- Asynchronous Interoperability Description and Authentication: Addressing Challenges in a Webhook-Based Event-Driven Architecture. -- Variant Management Impact on Architectural Maintainability in Embedded Systems – A Case Study. -- AI-Driven Machine Learning Architecture for Scalable Irrigation Detection in Precision Agriculture: A Case Study with CropX.

Sommario/riassunto

This book constitutes the refereed proceedings of the 19th European Conference on Software Architecture, ECSA 2025, held in Limassol, Cyprus, during September 15–19, 2025. The 18 full papers and 9 short papers presented in this volume were carefully reviewed and selected from 80 submissions. They are grouped into the following topics: Architectures for MLOps; Large Language Models in Software Architecture; Architectures for Embedded Systems; Self-Adaptive, Secure and Federated Learning Systems; Microservice Architecture; Software Architecture Practices, Perspectives and Evolution; Industry papers.
