

International Workshop on Variability Management for Modern Technologies (VM4ModernTech 2022)

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ABSTRACT

Implementing variability in a software system allows developers to deal with different customer needs and requirements—establishing a family of related system variants. Variability can be managed through opportunistic (e.g., clone-and-own) or systematic strategies (e.g., a software product line). In the product-line community, variability management has been researched for systems in numerous domains, such as defense, avionics, or finance, and for various platforms, such as desktops, web applications, or embedded systems. Unfortunately, other research communities; especially those working on modern technologies, such as microservice architectures, cyber-physical systems, robotics, cloud computing, autonomous driving, or ML/AI-based systems; are less aware of the respective state-of-the-art in variability management. Consequently, these communities face similar problems and start to redeveloped similar solutions as the product-line community already did. With the *International Workshop on Variability Management for Modern Technologies*, we intend to foster and strengthen synergies between the communities regarding variability management for modern technologies. We aim to attract researchers and practitioners to contribute processes, techniques, tools, empirical studies, problem descriptions, or solutions that are connected to reuse and variability management for modern technologies. By inviting different communities and initiating collaborations between them, we hope that VM4ModernTech raises the interest of researchers outside the product-line community for variability management, and thus avoid expensive redevelopments.

CCS CONCEPTS

• **Software and its engineering** → **Software product lines.**

KEYWORDS

Variability management, software architecture, modern technologies

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Workshop Summary

The diversity of customer (e.g., requested features) and technological (e.g., heterogeneous hardware) requirements makes variability a distinct property of most modern software systems. If properly managed, developers can use variability to customize systems to changing requirements at design- or run-time. For instance, by considering the current context (e.g., available hardware and workload), cloud- and (micro-)service-based systems can adapt their behavior to changing requirements (e.g., resource consumption).

Modern technologies that involve some form of variability management have gained increasing interest in research. Several of the challenges posed by such technologies have already been researched in the context of variability management in the product-line community. Building on a previous challenge case [2] and instance of the workshop [1], the 2022 edition of the *International Workshop on Variability Management for Modern Technologies* serves as a venue for integrating knowledge obtained in the product-line community into modern technologies. So, we intend the workshop to guide interdisciplinary research on variability management in the context of other communities. To this end, we work with a diverse community towards pushing the state-of-the-art in research and practice of variability management in various domains, such as: automotive software, autonomous driving, bots in software engineering, cloud computing, cyber-physical systems, DevOps, digital twins, internet of things, (micro-)service architectures, ML/AI-based systems, and robotics. The program committee accepted one full paper for VM4ModernTech 2022.

Website: <https://sites.google.com/view/vm4moderntech-2022>

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