CISTalks
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Open to the public. All are invited.

Model-driven Software Engineering

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Abstract

Modeling has been considered as a technique for performing abstractions on the real-world entities so as to manage their complexity. With abstract models, many benefits can be achieved including better and quick understanding of complex problems, precise communication, early analysis and simulation of decisions, and automation support (e.g., code/document generation). Models can be specified using diverse modeling approaches including natural languages, boxes and lines and modeling languages. Practitioners from diverse industries may define their own domain-specific modeling languages along with its toolset (e.g., editor and code generators) using the meta-modeling technologies. Meta-modeling technologies support defining a meta-model for a modeling language, which consists of abstract concepts of the language and their relationships (meta-model), and also the concrete symbols that correspond to those concepts (i.e., actually the language itself). Meta-modeling technologies can further produce the modeling editors automatically and support many other features including the development of model transformation tools. In this talk, Dr. Ozkaya discusses the notions of model, modeling, modeling languages, and meta-modeling, and introduces one of the top-used meta-modeling technologies called Metaedit+.

Biography

Mert is currently an associate professor at the Department of Computer Engineering at Yeditepe University, Istanbul. Mert holds a BS degree in Computer Engineering from Bilkent University, Turkey (2009), MSc in Computer Science from University of Essex, UK (2011), and PhD in Computer Science from City, University of London, UK (2014). Mert has more than 10 years of experience in software engineering. Mert's research interests include software architectures, modeling languages, meta-modeling, software ecosystems, formal verification, and empirical software engineering. Mert leads the software engineering research group at Yeditepe. He is the author of more than 40 peer-reviewed scientific papers. He has been active in several of national and international research and consultancy projects with various large software companies, whereby he has worked as a principal researcher, language engineer and tool developer in different domains such as logistics and transportation, e-commerce, defense/military systems, and car manufacturing. He has taken a holistic, systemic, and multi-disciplinary approach to solving real industrial problems. With this, he has ample experience in software and systems architecting,

model-based engineering, formal verification, language engineering and tool constructions. All of these topics, he is also actively teaching. He has developed and taught around different academic courses including software engineering, software architecture, and software testing and provided courses on model-based engineering to different companies in Turkey. He has reviewed more than 20 national projects and is a regular reviewer for several international journals. Mert has the organisation chair for the 17th European Conference on Software Architecture (ECSA), which is the premier European software architecture conference and took place at Yeditepe University between 18-22 September 2023.