Lothar Hotz, Michel Aldanondo, Trosten Krebs

To cite this version:

HAL Id: hal-02339605
https://imt-mines-albi.hal.science/hal-02339605
Submitted on 30 Oct 2019

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L’archive ouverte pluridisciplinaire HAL, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d’enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Distributed under a Creative Commons Attribution 4.0 International License
21th International Configuration Workshop

Proceedings of the 21th International Configuration Workshop

Edited by Lothar Hotz, Michel Aldanondo, Thorsten Krebs

September 18 – 19, 2019

Hamburg, Germany

Organized by
Chairs

Lothar Hotz, University of Hamburg, HiTeC, Hamburg, Germany
Michel Aldanondo, Toulouse University, Mines Albi, France
Thorsten Krebs, encoway GmbH, Bremen, Germany

Program Committee

Michel Aldanondo, Toulouse University, Mines Albi, France
Tomas Axling, Tacton Systems, Denmark
Andrés Felipe Barco, Universidad Santiago de Cali, Colombia
David Benavides, University of Seville, Spain
Andreas Falkner, Siemens AG, Austria
Alexander Felfernig, Graz University of Technology, Austria
Cipriano Forza, University of Padova, Italy
Gerhard Friedrich, University of Klagenfurt, Austria
Paul Grünbacher, Johannes Kepler University Linz, Austria
Albert Haag, Product Management GmbH, Germany
Alois Haselböck, Siemens AG, Austria
Petri Helo, University of Vaasa, Finland
Lothar Hotz, University of Hamburg, HiTeC, Germany
Dietmar Jannach, University of Klagenfurt, Austria
Thorsten Krebs, encoway GmbH, Bremen, Germany
Tomi Männistö, University of Helsinki, Finland
Mikko Raatikainen, Aalto University, Finland
Rick Rabiser, Johannes Kepler University Linz, Austria
Sara Shafiee, Technical University of Denmark, Denmark
Markus Stumptner, University of South Australia, Australia
Juha Tiihonen, University of Helsinki, Finland
Elise Vareilles, Toulouse University, Mines Albi, France
Yue Wang, Hang Seng Management College, Hong Kong
Linda Zhang, IESEG Business School of Management Paris, France

Local Arrangements

Lothar Hotz, University of Hamburg, HiTeC, Germany
Evelyn Staske, HiTeC, Germany
Preface

Configuration is the task of composing product models of complex systems from parameterisable components. This task demands for powerful knowledge-representation formalisms to capture the great variety and complexity of configurable product models. Furthermore, efficient reasoning and conflict resolution methods are required to provide intelligent interactive behavior in configurator software, such as solution search, satisfaction of user preferences, personalization, or optimization.

The main goal of the Configuration Workshop is to promote high-quality research in all technical and application areas related to configuration. In this year, besides typical contributions about knowledge representation and reasoning in configuration, adaptation and re-configuration of delivered products is a one focus.

The workshop is of interest for both, researchers working in the various fields of Artificial Intelligence (AI) technologies as well as industry representatives interested in the relationship between configuration technology and the business problem behind configuration and mass customization. It provides a forum for the exchange of ideas, evaluations and experiences especially in the use of AI techniques within these application and research areas.

The 2019 Workshop on Configuration continues the series of workshops started at the AAAI'96 Fall Symposium and continued on IJCAI, AAAI, and ECAI since 1999. In recent years, the workshop was held independently from major conferences.

This year special thanks has to be given to following Configuration Workshop Sponsors: Siemens (Austria), Product Management Haag (Germany), Variantum (Finland), EventHelp (Austria), encoway (Germany), IMT Mines-Albi-Carmaux (France), HITEC (Germany), University of Hamburg (Germany)

Lothar Hotz, Michel Aldanondo, and Thorsten Krebs

September 2019
Contents

Consistency Management

Coping with Inconsistent Models of Requirements 1
Juha Tiihonen, Mikko Raatikainen, Lalli Myllyaho, Clara Marie Lüders, and Tomi Männistö

Consistency-based Merging of Variability Models 9
Alexander Felfernig, Mathias Uta, Gottfried Schenner, and Johannes Spöcklberger

Conversational Recommendations Utilizing Model-based Reasoning 13
Oliver Tazl, Alexander Perko, and Franz Wotawa

Decision Biases in Preference Acquisition 20
Martin Stettinger, Alexander Felfernig, and Ralph Samer

Product and Service Configuration

Enrichment of Geometric CAD Models for Service Configuration 22
Daniel Schreiber, Lukas Domarkas, Paul Christoph Gembarski, and Roland Lachmayer

Applications and Benefits

smartfit: Using Knowledge-based Configuration for Automatic Training Plan Generation 30
Florian Grigoleit, Peter Struss, and Florian Kreuzpointner

Prioritizing Products for Profitable Investments on Product Configuration Systems 38
Sara Shafiee, Lars Hvam, and Poorang Piroozfar

A Search Engine Optimization Recommender System 43
Juan Camilo Duque Delgado, Christian David Hoyos, Andrés Felipe Barco Santa, and Elise Vareilles

Comparing the Gained Benefits from Product Configuration Systems 48
Sara Shafiee, Lars Hvam, and Anders Haug
Configuration Requirements

Reusing Components across Multiple Configurators
Amartya Ghosh, Anna Myrodia, Lars Hvam, and Niels Henrik Mortensen

Adaptive Autonomous Machines – Requirements and Challenges
Lothar Hotz, Stephanie von Riegen, Matthias Riebisch, Markus Kiele-Dunsche, and Rainer Herzog

Constraint Solver Requirements for Interactive Configuration
Andreas Falkner, Alois Haselböck, Gerfried Krames, Gottfried Schenner, and Richard Taupe

Configuration and Standards

Portfolio Management: How to Find Your Standard Variants
Frank Dylla, Daniel Jeuken, and Thorsten Krebs