

Development Of A Methodology For Evaluating And

Inhaltsangabe:Abstract: In the 1980s research efforts and successes made artificial neural networks popular. Since the 1990s engineers have been using this foundation for problem solving. But artificial neural network solutions for "real-world" problems are sometimes hard to find because of the complexity of the domain and because of the vast number of design attributes the engineer has to deal with. This thesis provides a structured overview of attributes in the design process of artificial neural networks and reviews technical process models. Current development methods for artificial neural networks are then reviewed and critiqued. The thesis concludes with a new design and development method for artificial neural networks. Inhaltsverzeichnis:Table of Contents: List of figuresx List of tablesxi Introduction1 1.Design attributes in ANN3 1.1ANN models4 1.1.1Node level7 1.1.2Network level9 1.1.3Training level9 1.2Data and data representation10 1.3Global system design12 1.4Hardware and software implementation13 1.5Characteristics of ANNs15 1.5.1Advantages of ANNs15 1.5.2Limitations and concerns16 2.Technical process models and engineering methods18 2.1Why use an engineering method?18 2.2Evolutionary model of engineering discipline20 2.3Overview of technical process models22 2.3.1Taxonomy of technical process models24 2.3.2Prototyping25 2.3.3Incremental method26 2.3.4Strict contractual approach26 2.3.5Deciding on process models and methods26 2.3.6Examples of process models27 2.3.7Representation of process models27 2.4Quality criteria of process models29 3.Current engineering methods for ANNs30 3.1Why a special method for ANNs?30 3.1.1Are conventional engineering methodologies suitable for ANNs?30 3.2Methods for expert systems31 3.3System identification methods35 3.4Bailey and Thompson37 3.4.1Criticism43 3.5Medsker and Liebowitz44 3.6Jones and Franklin45 3.7Schalko47 3.8Karayiannis and Nicolaos48 3.8.1Criticism49 3.9Nelson and Illingworth50 3.9.1Criticism51 3.10Whittington and Spracklen52 3.10.1Criticism56 3.11Lawrence and Andriola57 3.11.1Criticism58 3.12General criticism of current methodologies58 4.Proposed design and development method60 4.1Development process61 4.1.1Requirement analysis65 4.1.2Specification68 4.1.3Data and domain analysis70 4.1.4Architectural design76 4.1.5Detailed ANN design84 4.1.6ANN implementation92 4.1.7Training93 4.1.8Monitoring training94 4.1.9ANN quality [...]

Ever-changing business needs have prompted large companies to rethink their enterprise IT. Today, businesses must allow interaction with their customers, partners, and employees at more touch points and at a depth never thought previously. At the same time, rapid advances in information technologies, like business digitization, cloud computing, and Web 2.0, demand fundamental changes in the enterprises' management practices. These changes have a drastic effect not only on IT and business, but also on policies, processes, and people. Many companies therefore embark on enterprise-wide transformation initiatives. The role of Enterprise Architecture (EA) is to architect and supervise this transformational journey. Unfortunately, today's EA is often a ponderous and detached exercise, with most of the EA initiatives failing to create visible impact. The enterprises need an EA that is agile and responsive to business dynamics. Collaborative Enterprise Architecture provides the innovative solutions today's enterprises require, informed by real-world experiences and experts' insights. This book, in its first part, provides a systematic compendium of the current best practices in EA, analyzes current ways of doing EA, and identifies its constraints and shortcomings. In the second part, it leaves the beaten tracks of EA by introducing Lean, Agile, and Enterprise 2.0 concepts to the traditional EA methods. This blended approach to EA focuses on practical aspects, with recommendations derived from real-world experiences. A truly thought provoking and pragmatic guide to manage EA, Collaborative Enterprise Architecture effectively merges the long-term oriented top-down approach with pragmatic bottom-up thinking, and that way offers real solutions to businesses undergoing enterprise-wide change. Covers the latest emerging technologies affecting business practice, including digitization, cloud computing, agile software development, and Web 2.0 Focuses on the practical implementation of EAM rather than theory, with recommendations based on real-world case studies Addresses changing business demands and practices, including Enterprise 2.0, open source, global sourcing, and more Takes an innovative approach to EAM, merging standard top-down and pragmatic, bottom-up strategies, offering real solutions to businesses undergoing enterprise-wide changes

In response to a Congressional mandate, the National Research Council conducted a review of the SBIR program at the five federal agencies with SBIR programs with budgets in excess of \$100 million (DOD, NIH, NASA, DOE, and NSF). The project was designed to answer questions of program operation and effectiveness, including the quality of the research projects being conducted under the SBIR program, the commercialization of the research, and the program's contribution to accomplishing agency missions. This report describes the proposed methodology for the project, identifying how the following tasks will be carried out: 1) collecting and analyzing agency databases and studies; 2) surveying firms and agencies; 3) conducting case studies organized around a common template; and 4) reviewing and analyzing survey and case study results and program accomplishments. Given the heterogeneity of goals and procedures across the five agencies involved, a broad spectrum of evaluative approaches is recommended.

The Sigma Methodology For Risk Management In Systems Development.ISBN: 095279568X Year: 2002 The Sigma methodology allows the capture of collective knowledge and expertise from those involved on the project, in a form that facilitates communication of Events, Assessments and the pro-active management of Risks. Sigma can be applied to any type of project, or programme.

Methodology for Product Development in Architecture is dedicated to the methodology and processes of designing, developments and research of standard building products, building product systems and special building components, as well as to their applications in buildings. Therefore, this publication is of importance to product designers and product developers, who are mainly concerned with developing products and components at the side of producers, as well as to materializing architects and component designers. They are concerned with the materializing of the functional and spatial building concept as a whole and in parts.

Strip development method for rotationally symmetrical double curved surface fabrication applied to heat exchangers.

Future development of this methodology should include additions and expansions of the various exercises to meet the needs of more diverse populations. A more careful elaboration and progression of exercises and their inter-relatedness would increase its usefulness and compatibility for groups where goals were varied. Matching children and families can be an enormous challenge. A future version should include a method for meeting this need. Work with untreated older children and adults is especially difficult because of more deeply entrenched behaviors and less permeable family systems. It is hoped that an extension of this work might address the needs of both groups. Carefully researched over ten years and eagerly anticipated by the agile community, *Crystal Clear: A Human-Powered Methodology for Small Teams* is a lucid and practical introduction to running a successful agile project in your organization. Each chapter illuminates a different important aspect of orchestrating agile projects. Highlights include Attention to the essential human and communication aspects of successful projects Case studies, examples, principles, strategies, techniques, and guiding properties Samples of work products from real-world projects instead of blank templates and toy problems Top strategies used by software teams that excel in delivering quality code in a timely fashion Detailed introduction to emerging best-practice techniques, such as Blitz Planning, Project 360°, and the essential Reflection Workshop Question-and-answer with the author about how he arrived at these recommendations, including where they fit with CMMI, ISO, RUP, XP, and other methodologies A detailed case study, including an ISO auditor's analysis of the project Perhaps the most important contribution this book offers is the Seven Properties of Successful Projects. The author has studied successful agile projects and identified common traits they share. These properties lead your project to success; conversely, their absence endangers your project.

"The U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) and the Force XXI Training Program have sponsored the development of a structured simulation-based training program for selected staffs of conventional mounted brigades. The development effort, entitled the Combined Arms Operations at Brigade Level Realistically Achieved Through Simulation (and known as COBRAS) resulted in construction of training support packages (TSPs) for large-scale exercises and for small-group vignettes. Development of the scenario and all TSP materials followed the guidance found in the *Methodology for the Development of Structured Simulation-Based Training*, published by ARI in 1995. This report documents an expanded methodology, based on experience in the COBRAS program. The expansion is contained in the *Guide for Development of Structured Simulation-Based Training*. The Guide contains additional examples and warnings, and more in-depth coverage of TSP construction and formative evaluations. This report discusses the activities in the methodology."--DTIC.

The initial motivator for the development of DRM, a Design Research Methodology, and the subsequent writing of this book was our frustration about the lack of a common terminology, benchmarked research methods, and above all, a common research methodology in design. A shared view of the goals and framework for doing design research was missing. Design is a multidisciplinary activity occurring in multiple application areas and involving multiple stakeholders. As a consequence, design research emerges in a variety of disciplines for a variety of applications with a variety of subjects. This makes it particularly difficult to review its literature, relate various pieces of work, find common ground, and validate and share results that are so essential for sustained progress in a research community. Above all, design research needs to be successful not only in an academic sense, but also in a practical sense. How could we help the community develop knowledge that is both academically and practically worthwhile? Each of us had our individual ideas of how this situation could be improved. Lucienne Blessing, while finishing her thesis that involved studying and improving the design process, developed valuable insights about the importance and relationship of empirical studies in developing and evaluating these improvements. Amaresh Chakrabarti, while finishing his thesis on developing and evaluating computational tools for improving products, had developed valuable insights about integrating and improving the processes of building and evaluating tools.

A three-phase research effort is underway to develop field methodology for measuring the effects of experimental clothing and equipment on the combat effectiveness of individual infantrymen. The first partial report in this series reported work performed to identify and rank the relative importance of the physical tasks performed in combat by the individual infantryman. One of the tasks which were considered by a sample of combat veterans to be important to combat success was the ability to march and move effectively in a combat area. This report describes the work performed to develop a reliable method for measuring soldier performance in this task under conditions considered representative of combat conditions. Procedures were established for measuring performance on flat and hilly terrain and tested for reliability and sensitivity to differences in clothing and equipment using USAGETA Troops. A modified test situation and data collection method is recommended for inclusion in an integrated field course to be evaluated as the next step in the research program.

This book presents a fresh view of action research as a methodology uniquely suited to researching the processes of innovation and change. Drawing on twenty-five years'™ experience of leading or facilitating action research projects, Bridget Somekh argues that action research can be a powerful systematic intervention, which goes beyond describing, analyzing and theorizing practices to reconstruct and transform those practices. The book examines action research into change in a range of educational settings, such as schools and classrooms, university departments, and a national evaluation of technology in schools. The opening chapter presents eight methodological principles and discusses key methodological issues. The focus then turns to action research in broader contexts such as '™southern'™ countries, health, business and management, and community development. Each chapter thereafter takes a specific research project as its starting point and critically reviews its design, relationships, knowledge outcomes, political engagement and impact. Action Research is important reading for postgraduate students and practitioner researchers in education, health and management, as well as those in government agencies and charities who wish to research and evaluate change and development initiatives. It is also valuable for pre-service and in-service training of professionals such as teachers, nurses and managers.

Encouraging readers to take a critical approach to empirical data, the authors provide an account that helps social science researchers to develop new and interesting theories.

Die Entwicklung eingebetteter Systeme wird aufgrund der immer anspruchsvolleren Anwendungen sowie der

Verwendung von leistungsfähigeren Hardware-Architekturen (z.B. Multicore-, Hybrid-Systeme) immer komplexer. Modellgetriebene Methoden reduzieren die Komplexität des Systems mittels angemessenen Abstraktionsniveaus. Diese Arbeit stellt die modellgetriebene Entwicklungsmethodik DMOSES (Deterministische Modelle für die signalverarbeitenden eingebetteten Systeme) vor. Diese Methodik strebt die Verbesserung der Entwicklung hybrider eingebetteten Systeme (z.B. CPUs und FPGAs) hinsichtlich der Komplexität mittels anpassbarer Abstraktionsebenen, automatischer Codegenerierung und Systemverifikation an. Systeme werden mittels UML-Verhaltensmodelle spezifiziert, deren erweiterte Semantik relevante funktionale und nicht-funktionale Aspekte hybrider eingebetteten Systemen beschreibt. Eine anpassbare Abstraktionsebene wird durch die Integration von automatischer Code-Generierung und optimierbarem Code erreicht. Außerdem werden Sicherheitsanforderungen durch die Integration von Analysetechniken (Formale Verifikation, Ausführungszeit-Analyse und Software-Verträgen) in die Entwicklungsmethodik verifiziert.

This book can help transform your training development methodology into one that allows you to rapidly respond to ever changing business needs. It will teach you how to deliver learning solutions that are both timely and effective. It will introduce you to a flexible development technique, one that allows you to keep pace with fast changing business conditions. It will show you how to achieve better collaboration with your business partners. It will help you create empowered, self-organizing, cross functional teams that can distill large training efforts into smaller components that can then be developed and delivered over multiple iterations. Finally, this book will help you assess if the organizational structure of your training department is optimized to support the needs of your company.

The study explores methodology in the area of project impact evaluation. It addresses the problem that there is not as yet a distinctive methodology for measuring impacts, while methodologies frequently used for this are not often ideal for presenting information about changes in a large number of indicators, especially where these cannot be priced. A suitable methodology might identify a set of key developmental changes that are functionally related to the project, by a modelling and scoping process. Transformation of selected indicators of change to attain unidimensionality and scale - commensurability makes possible final aggregation into a composite index of impact for use in selecting projects with larger positive impacts.

Alexander Sänn presents a functional method based on lead user method, preference measurement, and recommendations using collaborative filtering. The introduced method in this book stimulates input from internal and external sources, predicts basic customers' acceptance, and evaluates this input against pre-defined criteria such as feasibility and existing patents for further concept generation. In sum, the new method addresses common innovation barriers and helps to reduce management uncertainties. This book provides further insights to the use of lead users as innovation sources in three major industries. The author extends the methodological toolbox with practical implications and contributes to the highly discussed topic in innovation management.

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