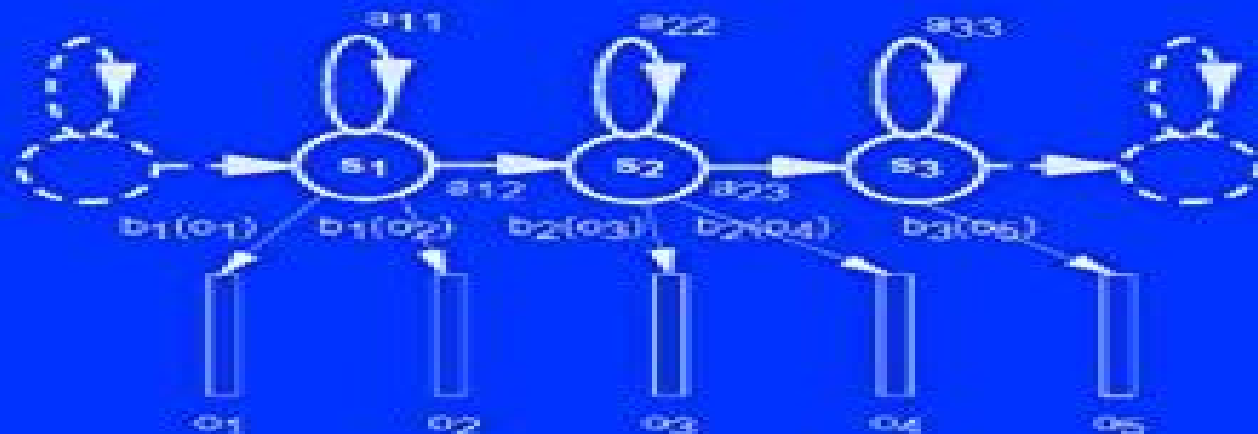


Robust Adaptation to Non-Native Accents in Automatic Speech Recognition



Robust Adaptation To Nonnative Accents In Automatic Speech Recognition

Christian Müller



Robust Adaptation To Nonnative Accents In Automatic Speech Recognition:

Robust Adaptation to Non-Native Accents in Automatic Speech Recognition Silke Goronzy, 2002-12-19 Speech recognition technology is being increasingly employed in human machine interfaces A remaining problem however is the robustness of this technology to non native accents which still cause considerable difficulties for current systems In this book methods to overcome this problem are described A speaker adaptation algorithm that is capable of adapting to the current speaker with just a few words of speaker specific data based on the MLLR principle is developed and combined with confidence measures that focus on phone durations as well as on acoustic features Furthermore a specific pronunciation modelling technique that allows the automatic derivation of non native pronunciations without using non native data is described and combined with the previous techniques to produce a robust adaptation to non native accents in an automatic speech recognition system

Robust Adaptation to Non-Native Accents in Automatic Speech Recognition Silke Goronzy, 2003-07-01 Speech recognition technology is being increasingly employed in human machine interfaces A remaining problem however is the robustness of this technology to non native accents which still cause considerable difficulties for current systems In this book methods to overcome this problem are described A speaker adaptation algorithm that is capable of adapting to the current speaker with just a few words of speaker specific data based on the MLLR principle is developed and combined with confidence measures that focus on phone durations as well as on acoustic features Furthermore a specific pronunciation modelling technique that allows the automatic derivation of non native pronunciations without using non native data is described and combined with the previous techniques to produce a robust adaptation to non native accents in an automatic speech recognition system

Speaker Classification I Christian Müller, 2007-08-28 This volume and its companion volume LNAI 4441 constitute a state of the art survey in the field of speaker classification Together they address such intriguing issues as how speaker characteristics are manifested in voice and speaking behavior The nineteen contributions in this volume are organized into topical sections covering fundamentals characteristics applications methods and evaluation

Speech Recognition France Mihelič, Janez Zibert, 2008-11-01 Chapters in the first part of the book cover all the essential speech processing techniques for building robust automatic speech recognition systems the representation for speech signals and the methods for speech features extraction acoustic and language modeling efficient algorithms for searching the hypothesis space and multimodal approaches to speech recognition The last part of the book is devoted to other speech processing applications that can use the information from automatic speech recognition for speaker identification and tracking for prosody modeling in emotion detection systems and in other speech processing applications that are able to operate in real world environments like mobile communication services and smart homes

Technology-Enhanced Language Learning for Specialized Domains Elena Martín-Monje, Izaskun Elorza, Blanca García Ríaza, 2016-03-10

Technology Enhanced Language Learning for Specialized Domains provides an exploration of the latest developments in

technology enhanced learning and the processing of languages for specific purposes It combines theoretical and applied research from an interdisciplinary angle covering general issues related to learning languages with computers assessment mobile assisted language learning the new language massive open online courses corpus based research and computer assisted aspects of translation The chapters in this collection include contributions from a number of international experts in the field with a wide range of experience in the use of technologies to enhance the language learning process The essays have been brought together precisely in recognition of the demand for this kind of specialised tuition offering state of the art technological and methodological innovation and practical applications The topics covered revolve around the practical consequences of the current possibilities of mobility for both learners and teachers as well as the applicability of updated technological advances to language learning and teaching particularly in specialized domains This is achieved through the description and discussion of practical examples of those applications in a variety of educational contexts At the beginning of each thematic section readers will find an introductory chapter which contextualises the topic and links the different examples discussed Drawing together rich primary research and empirical studies related to specialized tuition and the processing of languages Technology Enhanced Language Learning for Specialized Domains will be an invaluable resource for academics researchers and postgraduate students in the fields of education computer assisted language learning languages and linguistics and language teaching

Audiovisual Speech Processing Gérard Bailly,Pascal Perrier,Eric Vatikiotis-Bateson,2012-04-26 This book presents a complete overview of all aspects of audiovisual speech including perception production brain processing and technology

Advances in Robotics, Automation and Control Jesús Arámburo-Lizárraga,Antonio Ramírez-Treviño,2008-10-01 The book presents an excellent overview of the recent developments in the different areas of Robotics Automation and Control Through its 24 chapters this book presents topics related to control and robot design it also introduces new mathematical tools and techniques devoted to improve the system modeling and control An important point is the use of rational agents and heuristic techniques to cope with the computational complexity required for controlling complex systems Through this book we also find navigation and vision algorithms automatic handwritten comprehension and speech recognition systems that will be included in the next generation of productive systems developed by man

Frontiers of Language and Teaching, Vol.2: Proceedings of the 2011 International Online Language Conference (IOLC 2011) , **Computational Science and Its Applications - ICCSA 2008** Osvaldo Gervasi,Beniamino Murgante,Antonio Laganà,David Taniar,Youngsong Mun,2008-06-28 This two volume set is assembled following the 2008 International Conference on Computational Science and Its Applications ICCSA 2008 a premium international event held in Perugia Italy from June 30 to July 3 2008 The collection of fully refereed high quality original works accepted as theme papers for presentation at ICCSA 2008 are published in this LNCS proceedings set This outstanding collection complements the volume of workshop papers traditionally published by IEEE Computer Society The

continuous support of computational science researchers has helped ICCSA to become a firmly established forum in the area of scientific computing and the conference itself become a recurring scientific and professional meeting that cannot be given up. The computational science field based on fundamental disciplines such as mathematics, physics and chemistry is finding new computational approaches to foster the human progress in heterogeneous and fundamental areas such as aerospace and automotive industries, bioinformatics and nanotechnology, studies, networks and grid computing, computational geometry and biometrics, computer education, virtual reality and art. Due to the growing complexity of many challenges in computational science, the use of sophisticated algorithms and emerging technologies is inevitable. Together these far-reaching scientific areas help to shape this conference in the areas of state of the art computational science research and applications encompassing the facilitating theoretical foundations and the innovative applications of such results in other areas.

Advanced Microsystems for Automotive Applications 2005 Jürgen Valldorf, Wolfgang Gessner, 2005-12-19 Since 1995 the annual international forum on Advanced Microsystems for Automotive Applications AMAA has been held in Berlin. The event offers a unique opportunity for microsystems component developers, system suppliers and car manufacturers to show and to discuss competing technological approaches of microsystems based solutions in vehicles. The book accompanying the event has demonstrated to be an efficient instrument for the diffusion of new concepts and technology results. The present volume including the papers of the AMAA 2005 gives an overview on the state of the art and outlines imminent and mid term R D perspectives. The 2005 publication reflects as in the past the current state of discussions within industry. More than the previous publications the AMAA 2005 goes back to the technological requirements and indispensable developments for fulfilling the market needs. The large part of contributions dealing with sensors as well as sensor technologies and data fusion is exemplary for this tendency. In this context a paradigm shift can be stated. In the past the development focused predominantly on the detection and processing of single parameters originating from single sensors. Today the challenge increasingly consists in getting information of complex situations with a series of variables from different sensors and in evaluating this information. Smart integrated devices using the information deriving from the various sensor sources will be able to describe and assess a traffic situation or behaviour much faster and more reliable than a human being might be able to do. Additional information is available on www.amaa.de

Automatic Speech Recognition and Understanding, 2003

Software Engineering and Middleware Alberto Coen-Porisini, André van der Hoeck, 2007-07-12 The 3rd International Workshop on Software Engineering and Middleware SEM 2002 was held May 20-21 2002 in Orlando, Florida as a co-located event of the 2002 International Conference on Software Engineering. The workshop attracted 30 participants from academic and industrial institutions in many countries. Twenty seven papers were submitted of which 15 were accepted to create a broad program covering the topics of architectures, specification, components and adaptations, technologies and services. The focus of the workshop was on short presentations with substantial discussions afterwards. Thus we decided to include in this

proceedings also a short summary of every technical session which was written by some of the participants at the workshop. The workshop invited one keynote speaker Bobby Jadhav of CalKey who presented a talk on the design and use of model driven architecture and middleware in industry. We would like to thank all the people who helped organize and run the workshop. In particular we would like to thank the program committee for their careful reviews of the submitted papers. Wolfgang Emmerich for being an excellent General Chair and the participants for a lively and interesting workshop.

Design and Control of Workflow Processes Hajo A. Reijers, 2003-07-01. The motivation behind the conception of this monograph was to advance scientific knowledge about the design and control of workflow processes. A workflow processor or workflow for short is a specific type of business process, a way of organizing work and resources. Workflows are commonly found within large administrative organizations such as banks, insurance companies and governmental agencies. Carrying out the tasks of a workflow in a particular order is required to handle one type of case. Examples of cases are mortgage applications, customer complaints and claims for unemployment benefits. A workflow used in handling mortgage applications may contain tasks for recording the application, specifying a mortgage proposal and approving the final policy. The monograph concentrates on four workflow related issues within the area of Business Process Management: the field of designing and controlling business processes. The first issue is how workflows can be adequately modeled. Workflow modeling is an indispensable activity to support any reasoning about workflows. Different purposes of workflow modeling can be distinguished such as system enablement by Workflow Management Systems, knowledge management, costing and budgeting. The focus of workflow modeling in this monograph is a) to support simulation and analysis of workflows and b) to specify a new workflow design. The main formalism used for the modeling of workflows is the Petri net. Many interesting notions to define several relevant properties have been adopted such as the workflow net and the soundness notion.

Foundations of Software Technology and Theoretical Computer Science P.S. Thiagarajan, 1995-12-04. This book constitutes the refereed proceedings of the 15th International Conference on Foundations of Software Technology and Theoretical Computer Science (FSTTCS 95) held in Bangalore, India, in December 1995. The volume presents 31 full revised research papers selected from a total of 106 submissions together with full papers of four invited talks. Among the topics covered are algorithms, software technology, functional programming, theory, distributed algorithms, term rewriting and constraint logic programming, complexity theory, process algebras, computational geometry and temporal logics, and verification theory.

SmartKom: Foundations of Multimodal Dialogue Systems Wolfgang Wahlster, 2006-09-05. With contributions by leading scientists in the field, this book gives the first comprehensive overview of the results of the seminal SmartKom project, one of the most advanced multimodal dialogue systems worldwide.

Towards Adaptive Spoken Dialog Systems Alexander Schmitt, Wolfgang Minker, 2012-09-19. In *Monitoring Adaptive Spoken Dialog Systems*, authors Alexander Schmitt and Wolfgang Minker investigate statistical approaches that allow for recognition of negative dialog patterns in Spoken Dialog Systems (SDS). The

presented stochastic methods allow a flexible portable and accurate use Beginning with the foundations of machine learning and pattern recognition this monograph examines how frequently users show negative emotions in spoken dialog systems and develop novel approaches to speech based emotion recognition using hybrid approach to model emotions The authors make use of statistical methods based on acoustic linguistic and contextual features to examine the relationship between the interaction flow and the occurrence of emotions using non acted recordings several thousand real users from commercial and non commercial SDS Additionally the authors present novel statistical methods that spot problems within a dialog based on interaction patterns The approaches enable future SDS to offer more natural and robust interactions This work provides insights lessons and inspiration for future research and development not only for spoken dialog systems but for data driven approaches to human machine interaction in general

High Performance Computing for Computational Science - VECPAR 2002 José M.L.M. Palma,2003-04-07 This book constitutes the thoroughly refereed post proceedings of the 5th International Conference on High Performance Computing for Computational Science VECPAR 2002 held in Porto Portugal in June 2002 The 45 revised full papers presented together with 4 invited papers were carefully selected during two rounds of reviewing and improvement The papers are organized in topical sections on fluids and structures data mining computing in chemistry and biology problem solving environments computational linear and non linear algebra cluster computing imaging and software tools and environments *Archives of Acoustics Quarterly* ,2010 The Sixth International Symposium on Neural Networks (ISNN 2009) Hongwei Wang,Yi Shen,Tingwen Huang,Zhigang Zeng,2009-05-03 This volume of Advances in Soft Computing and Lecture Notes in Computer th Science vols 5551 5552 and 5553 constitute the Proceedings of the 6 International Symposium of Neural Networks ISNN 2009 held in Wuhan China during May 26 29 2009 ISNN is a prestigious annual symposium on neural networks with past events held in Dalian 2004 Chongqing 2005 Chengdu 2006 N jing 2007 and Beijing 2008 Over the past few years ISNN has matured into a well established series of international conference on neural networks and their applications to other fields Following this tradition ISNN 2009 provided an a demic forum for the participants to disseminate their new research findings and discuss emerging areas of research Also it created a stimulating environment for the participants to interact and exchange information on future research challenges and opportunities of neural networks and their applications ISNN 2009 received 1 235 submissions from about 2 459 authors in 29 co tries and regions Australia Brazil Canada China Democratic People s Republic of Korea Finland Germany Hong Kong Hungary India Islamic Republic of Iran Japan Jordan Macao Malaysia Mexico Norway Qatar Republic of Korea Singapore Spain Taiwan Thailand Tunisia United Kingdom United States Venezuela Vietnam and Yemen across six continents Asia Europe North America South America Africa and Oceania Based on rigorous reviews by the Program Committee members and reviewers 95 high quality papers were selected to be published in this volume **Robust Speech Recognition in Embedded Systems and PC**

Applications Jean-Claude Junqua,2006-04-18 Robust Speech Recognition in Embedded Systems and PC Applications

provides a link between the technology and the application worlds As speech recognition technology is now good enough for a number of applications and the core technology is well established around hidden Markov models many of the differences between systems found in the field are related to implementation variants We distinguish between embedded systems and PC based applications Embedded applications are usually cost sensitive and require very simple and optimized methods to be viable Robust Speech Recognition in Embedded Systems and PC Applications reviews the problems of robust speech recognition summarizes the current state of the art of robust speech recognition while providing some perspectives and goes over the complementary technologies that are necessary to build an application such as dialog and user interface technologies Robust Speech Recognition in Embedded Systems and PC Applications is divided into five chapters The first one reviews the main difficulties encountered in automatic speech recognition when the type of communication is unknown The second chapter focuses on environment independent adaptive speech recognition approaches and on the mainstream methods applicable to noise robust speech recognition The third chapter discusses several critical technologies that contribute to making an application usable It also provides some design recommendations on how to design prompts generate user feedback and develop speech user interfaces The fourth chapter reviews several techniques that are particularly useful for embedded systems or to decrease computational complexity It also presents some case studies for embedded applications and PC based systems Finally the fifth chapter provides a future outlook for robust speech recognition emphasizing the areas that the author sees as the most promising for the future Robust Speech Recognition in Embedded Systems and PC Applications serves as a valuable reference and although not intended as a formal University textbook contains some material that can be used for a course at the graduate or undergraduate level It is a good complement for the book entitled Robustness in Automatic Speech Recognition Fundamentals and Applications co authored by the same author

Robust Adaptation To Nonnative Accents In Automatic Speech Recognition Book Review: Unveiling the Power of Words

In a global driven by information and connectivity, the ability of words has be evident than ever. They have the capability to inspire, provoke, and ignite change. Such is the essence of the book **Robust Adaptation To Nonnative Accents In Automatic Speech Recognition**, a literary masterpiece that delves deep to the significance of words and their affect our lives. Compiled by a renowned author, this captivating work takes readers on a transformative journey, unraveling the secrets and potential behind every word. In this review, we shall explore the book is key themes, examine its writing style, and analyze its overall impact on readers.

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