Scientific Babel

This is the first volume that brings together research and practice from academic and industry settings and a combination of human and machine translation evaluation. Its comprehensive collection of papers by leading experts in human and machine translation quality and evaluation who situate current developments and chart future trends fills a clear gap in the literature. This is critical to the successful integration of translation technologies in the industry today, where the lines between human and machine are becoming increasingly blurred by technology: this affects the whole translation landscape, from students and trainers to project managers and professionals, including in-house and freelance translators, as well as, of course, translation scholars and researchers. The editors have broad experience in translation quality evaluation research, including investigations into professional practice with qualitative and quantitative studies, and the contributors are leading experts in their respective fields, providing a unique set of complementary perspectives on human and machine translation quality and evaluation, combining theoretical and applied approaches.

“I don’t translate, I create!”

Encyclopedia of Information Science and Technology, Fifth Edition

These proceedings collect papers presented at the 11th International Conference on Multimedia & Network Information Systems (MISSI 2018), held from 12 to 14 September 2018 in Wroclaw, Poland. The keynote lectures, given by four outstanding scientists, are also included here. The Conference attracted a great number of scientists from across Europe and beyond, and hosted the 6th International Workshop on Computational Intelligence for Multimedia Understanding as well as four special sessions. The majority of the papers describe various artificial intelligence (AI) methods applied to multimedia and natural language (NL) processing; they address hot topics such as virtual and augmented reality, identity recognition, video summarization, intelligent audio processing, accessing multilingual information and opinions, video games, and innovations in Web technologies. Accordingly, the proceedings provide a cutting-edge update on work being pursued in the rapidly evolving field of Multimedia and Internet Information Systems.

Connectionist Models

This book is the first volume that focuses on the specific challenges of machine translation with Arabic either as source or target language. It nicely fills a gap in the literature by covering approaches that belong to the three major paradigms of machine translation: Example-based, statistical and knowledge-based. It provides broad but rigorous coverage of the methods for incorporating linguistic knowledge into empirical MT. The book brings together original and extended contributions from a group of distinguished researchers from both academia and industry. It is a welcome and much-needed repository of important aspects in Arabic Machine Translation such as morphological analysis and syntactic reordering, both central to reducing the distance
between Arabic and other languages. Most of the proposed techniques are also applicable to machine translation of Semitic languages other than Arabic, as well as translation of other languages with a complex morphology.

Survey of the Field of Mechanical Translation of Languages

English is the language of science today. No matter which languages you know, if you want your work seen, studied, and cited, you need to publish in English. But that hasn't always been the case. Though there was a time when Latin dominated the field, for centuries science has been a polyglot enterprise, conducted in a number of languages whose importance waxed and waned over time—until the rise of English in the twentieth century. So how did we get from there to here? How did French, German, Latin, Russian, and even Esperanto give way to English? And what can we reconstruct of the experience of doing science in the polyglot past? With Scientific Babel, Michael D. Gordin resurrects that lost world, in part through an ingenious mechanism: the pages of his highly readable narrative account teem with footnotes—not offering background information, but presenting quoted material in its original language. The result is stunning: as we read about the rise and fall of languages, driven by politics, war, economics, and institutions, we actually see it happen in the ever-changing web of multilingual examples. The history of science, and of English as its dominant language, comes to life, and brings with it a new understanding not only of the frictions generated by a scientific community that spoke in many often mutually unintelligible voices, but also of the possibilities of the polyglot, and the losses that the dominance of English entails. Few historians of science write as well as Gordin, and Scientific Babel reveals his incredible command of the literature, language, and intellectual essence of science past and present. No reader who takes this linguistic journey with him will be disappointed.

Explorations in Empirical Translation Process Research

Computers in Translation

This book provides system developers and researchers in natural language processing and computational linguistics with the necessary background information for working with the Arabic language. The goal is to introduce Arabic linguistic phenomena and review the state-of-the-art in Arabic processing. The book discusses Arabic script, phonology, orthography, morphology, syntax and semantics, with a final chapter on machine translation issues. The chapter sizes correspond more or less to what is linguistically distinctive about Arabic, with morphology getting the lion's share, followed by Arabic script. No previous knowledge of Arabic is needed. This book is designed for computer scientists and linguists alike. The focus of the book is on Modern Standard Arabic; however, notes on practical issues related to Arabic dialects and languages written in the Arabic script are presented in different chapters. Table of Contents: What is "Arabic"? / Arabic Script / Arabic Phonology and Orthography / Arabic Morphology / Computational Morphology Tasks / Arabic Syntax / A Note on Arabic Semantics / A Note on Arabic and Machine Translation

A Survey of Machine Translation

ICICCT 2019 – System Reliability, Quality Control, Safety, Maintenance and Management

Learn how to build machine translation systems with deep learning from the ground up, from basic concepts to cutting-edge research.

2019 4th International Conference on Mechanical, Control and Computer Engineering (ICMCCE)

Translation Revision and Post-editing

The rise of intelligence and computation within technology has created an eruption of potential applications in numerous professional industries. Techniques such as data analysis, cloud computing, machine learning, and others have altered the traditional processes of various disciplines including healthcare, economics, transportation, and politics. Information technology in
today’s world is beginning to uncover opportunities for experts in these fields that they are not yet aware of. The exposure of specific instances in which these devices are being implemented will assist other specialists in how to successfully utilize these transformative tools with the appropriate amount of discretion, safety, and awareness. Considering the level of diverse uses and practices throughout the globe, the fifth edition of the Encyclopedia of Information Science and Technology series continues the enduring legacy set forth by its predecessors as a premier reference that contributes the most cutting-edge concepts and methodologies to the research community. The Encyclopedia of Information Science and Technology, Fifth Edition is a three-volume set that includes 136 original and previously unpublished research chapters that present multidisciplinary research and expert insights into new methods and processes for understanding modern technological tools and their applications as well as emerging theories and ethical controversies surrounding the field of information science. Highlighting a wide range of topics such as natural language processing, decision support systems, and electronic government, this book offers strategies for implementing smart devices and analytics into various professional disciplines. The techniques discussed in this publication are ideal for IT professionals, developers, computer scientists, practitioners, managers, policymakers, engineers, data analysts, and programmers seeking to understand the latest developments within this field and who are looking to apply new tools and policies in their practice. Additionally, academicians, researchers, and students in fields that include but are not limited to software engineering, cybersecurity, information technology, media and communications, urban planning, computer science, healthcare, economics, environmental science, data management, and political science will benefit from the extensive knowledge compiled within this publication.

Discourse in Statistical Machine Translation

The Routledge Encyclopedia of Translation Technology provides a state-of-the-art survey of the field of computer-assisted translation. It is the first definitive reference to provide a comprehensive overview of the general, regional and topical aspects of this increasingly significant area of study. The Encyclopedia is divided into three parts: Part One presents general issues in translation technology, such as its history and development, translator training and various aspects of machine translation, including a valuable case study of its teaching at a major university; Part Two discusses national and regional developments in translation technology, offering contributions covering the crucial territories of China, Canada, France, Hong Kong, Japan, South Africa, Taiwan, the Netherlands and Belgium, the United Kingdom and the United States Part Three evaluates specific matters in translation technology, with entries focused on subjects such as alignment, bitext, computational lexicography, corpus, editing, online translation, subtitling and technology and translation management systems. The Routledge Encyclopedia of Translation Technology draws on the expertise of over fifty contributors from around the world and an international panel of consultant editors to provide a selection of articles on the most pertinent topics in the discipline. All the articles are self-contained, extensively cross-referenced, and include useful and up-to-date references and information for further reading. It will be an invaluable reference work for anyone with a professional or academic interest in the subject.

Computer-aided Translation

“I don’t translate, I create!” – This is the slogan of a translation agency called “Sternkopf Communications” located in Flöha, Germany. The translators at this translation agency are specialized in the field of marketing and perceive creativeness their daily bread. But what does this actually mean – I don’t translate, I create? Undoubtedly, the translation of a text from one language into another is not an easy and straightforward process. On the contrary, the translator needs to invest much time and one or the other headache before a target text (TT) finally sounds natural, fluent, coherent and logical for the target audience. Different possible translation solutions will have to be considered, language as well as culture-related equivalents often are not easily at hand etc. Would it not be pleasant if machine translation (MT) was there to help with this process? Yet, despite the enormous importance of creativity in translating, computer-aided translation (CAT) tools are being used frequently by professional translators, not to replace but to support the translator in their daily business. CAT tools enable their users to translate in a more consistent way, since they search source texts for words, phrases or sentences that have already been translated before and stored in the TM so that the translator does not need to translate this text unit again ‘from scratch’. Considering that this process brings about what could be called ‘semi-mechanical’ TTs, the use of CAT tools seems to stand in stark contrast to the importance of creativity mentioned above. Thus, the question arises whether CAT tools influence the creative energy of translators and, if this is the case, whether translators regard this influence as rather positive or negative. In this context, it is also important to consider which fields of expertise generally demand a high degree of uniformity/consistency in translations and which subject fields generally allow for a high degree of creative freedom. Accordingly, this paper pursues two related purposes. The first is to compare five CAT tools in their degree of usability. The second purpose is to identify translators’ perspectives on uniformity and creativity in translations with the goal to shedding light on the question whether CAT tools generally tend to positively or negatively influence the translation process on a rather linguistic than technological basis.

Machine Translation

Statistical machine translation (SMT) treats the translation of natural language as a machine learning problem. By examining many samples of human-produced translation, SMT algorithms automatically learn how to translate. SMT has made tremendous strides in less than two decades, and many popular techniques have only emerged within the last few years. This survey
presents a tutorial overview of state-of-the-art SMT at the beginning of 2007. We begin with the context of the current research, and then move to a formal problem description and an overview of the four main subproblems: translational equivalence modeling, mathematical modeling, parameter estimation, and decoding. Along the way, we present a taxonomy of some different approaches within these areas. We conclude with an overview of evaluation and notes on future directions.

Multiword Units in Machine Translation and Translation Technology

Due to the complexity, and heterogeneity of the smart grid and the high volume of information to be processed, artificial intelligence techniques and computational intelligence appear to be some of the enabling technologies for its future development and success. The theme of the book is “Making pathway for the grid of future” with the emphasis on trends in Smart Grid, renewable interconnection issues, planning-operation-control and reliability of grid, real time monitoring and protection, market, distributed generation and power distribution issues, power electronics applications, computer-IT and signal processing applications, power apparatus, power engineering education and industry-institute collaboration. The primary objective of the book is to review the current state of the art of the most relevant artificial intelligence techniques applied to the different issues that arise in the smart grid development.

Translation Quality Assessment

The dream of automatic language translation is now closer thanks to recent advances in the techniques that underpin statistical machine translation. This class-tested textbook from an active researcher in the field, provides a clear and careful introduction to the latest methods and explains how to build machine translation systems for any two languages. It introduces the subject's building blocks from linguistics and probability, then covers the major models for machine translation: word-based, phrase-based, and tree-based, as well as machine translation evaluation, language modeling, discriminative training and advanced methods to integrate linguistic annotation. The book also reports the latest research, presents the major outstanding challenges, and enables novices as well as experienced researchers to make novel contributions to this exciting area. Ideal for students at undergraduate and graduate level, or for anyone interested in the latest developments in machine translation.

Challenges for Arabic Machine Translation

Multimedia and Network Information Systems

The main objective of this book is to bring out a survey on different developments in computational linguistics tools and machine translation systems for Indian languages. Additionally, it discusses briefly the different existing approaches that have been used to develop various computational linguistics tools and machine translation systems. Literature survey shows that, the NLP though growing rapidly, it is still an immature area in Indian languages. Indian languages are highly agglutinative and rich morphological in nature. Syntactic and semantic variance is another reason that makes NLP is much harder for Indian languages. Literature reveals that the rule based grammar refinement process is extremely time consuming and difficult. Hence, most modern NLP developments are based on statistical or at least partly statistical, which allows the system to gather information about the frequency with which various constructions occur in specific contexts.

A Survey of Literary Translation and Machine Translation

Translation Revision and Post-editing looks at the apparently dissolving boundary between correcting translations generated by human brains and those generated by machines. It presents new research on post-editing and revision in government and corporate translation departments, translation agencies, the literary publishing sector and the volunteer sector, as well as on training in both types of translation checking work. This collection includes empirical studies based on surveys, interviews and keystroke logging, as well as more theoretical contributions questioning such traditional distinctions as translating versus editing. The chapters discuss revision and post-editing involving eight languages: Afrikaans, Catalan, Dutch, English, Finnish, French, German and Spanish. Among the topics covered are translator/reviser relations and revising/post-editing by non-professionals. The book is key reading for researchers, instructors and advanced students in Translation Studies as well as for professional translators with a special interest in checking translations.

Survey on Machine Translation
This volume constitutes the proceedings of the Third International Workshop of the European Association for Machine Translation, held in Heidelberg, Germany in April 1993. The EAMT Workshops traditionally aim at bringing together researchers, developers, users, and others interested in the field of machine or computer-assisted translation research, development and use. The volume presents thoroughly revised versions of the 15 best workshop contributions together with an introductory survey by the volume editor. The presentations are centered primarily on questions of acquiring, sharing, and managing lexical data, but also address aspects of lexical description.

Statistical Machine Translation

This title details the history of the field of machine translation (MT) from its earliest years. It glimpses major figures through biographical accounts recounting the origin and development of research programmes as well as personal details and anecdotes on the impact of political and social events on MT developments.

Machine Translation and Global Research

Neural Machine Translation

The Handbook of Linguistics

A Survey of the Present State of Machine Translation

The correct interpretation of Multiword Units (MWUs) is crucial to many applications in Natural Language Processing but is a challenging and complex task. In recent years, the computational treatment of MWUs has received considerable attention but there is much more to be done before we can claim that NLP and Machine Translation (MT) systems process MWUs successfully. This volume provides a general overview of the field with particular reference to Machine Translation and Translation Technology and focuses on languages such as English, Basque, French, Romanian, German, Dutch and Croatian, among others. The chapters of the volume illustrate a variety of topics that address this challenge, such as the use of rule-based approaches, compound splitting techniques, MWU identification methodologies in multilingual applications, and MWU alignment issues.

Arabic Natural Language Processing

Machine Translation Summit

"The first edition of this Handbook is built on surveys by well-known figures from around the world and around the intellectual world, reflecting several different theoretical predilections, balancing coverage of enduring questions and important recent work. Those strengths are now enhanced by adding new chapters and thoroughly revising almost all other chapters, partly to reflect ways in which the field has changed in the intervening twenty years, in some places radically. The result is a magnificent volume that can be used for many purposes." David W. Lightfoot, Georgetown University "The Handbook of Linguistics, Second Edition is a stupendous achievement. Aronoff and Rees-Miller have provided overviews of 29 subfields of linguistics, each written by one of the leading researchers in that subfield and each impressively crafted in both style and content. I know of no finer resource for anyone who would wish to be better informed on recent developments in linguistics." Frederick J. Newmeyer, University of Washington, University of British Columbia and Simon Fraser University "Linguists, their students, colleagues, family, and friends: anyone interested in the latest findings from a wide array of linguistic subfields will welcome this second updated and expanded edition of The Handbook of Linguistics. Leading scholars provide highly accessible yet substantive introductions to their fields: it's an even more valuable resource than its predecessor." Sally McConnell-Ginet, Cornell University "No handbook or text offers a more comprehensive, contemporary overview of the field of linguistics in the twenty-first century. New and thoroughly updated chapters by prominent scholars on each topic and subfield make this a unique, landmark publication." Walt Wolfram, North Carolina State University This second edition of The Handbook of Linguistics provides an updated and timely overview of the field of linguistics. The editor's broad definition of the field ensures that the book may be read by those seeking a comprehensive introduction to the subject,
but with little or no prior knowledge of the area. Building on the popular first edition, The Handbook of Linguistics, Second Edition features new and revised content reflecting advances within the discipline. New chapters expand the already broad coverage of the Handbook to address and take account of key changes within the field in the intervening years. It explores: psycholinguistics, linguistic anthropology and ethnolinguistics, sociolinguistic theory, language variation and second language pedagogy. With contributions from a global team of leading linguists, this comprehensive and accessible volume is the ideal resource for those engaged in study and work within the dynamic field of linguistics.

A Survey of Current Paradigms in Machine Translation

A Topical Bibliography of Translation and Interpretation

First published in 2002. Routledge is an imprint of Taylor & Francis, an informa company.

A Survey of Statistical Machine Translation

Routledge Encyclopedia of Translation Technology

This book discusses reliability applications for power systems, renewable energy and smart grids and highlights trends in reliable communication, fault-tolerant systems, VLSI system design and embedded systems. Further, it includes chapters on software reliability and other computer engineering and software management-related disciplines, and also examines areas such as big data analytics and ubiquitous computing. Outlining novel, innovative concepts in applied areas of reliability in electrical, electronics and computer engineering disciplines, it is a valuable resource for researchers and practitioners of reliability theory in circuit-based engineering domains.

Early Years in Machine Translation

Lynne Bowker and Jairo Buitrago Ciro introduce the concept of machine translation literacy, a new kind of literacy for scholars and librarians in the digital age. This book is a must-read for researchers and information professionals eager to maximize the global reach and impact of any form of scholarly work.

Survey of Machine Translation

Trends in E-Tools and Resources for Translators and Interpreters offers a collection of contributions from key players in the field of translation and interpreting that accurately outline some of the most cutting-edge technologies in this field.

Machine Translation and the Lexicon

A Survey on Syntax-aware Statistical Machine Translation

Connectionist Models contains the proceedings of the 1990 Connectionist Models Summer School held at the University of California at San Diego. The summer school provided a forum for students and faculty to assess the state of the art with regards to connectionist modeling. Topics covered range from theoretical analysis of networks to empirical investigations of learning algorithms; speech and image processing; cognitive psychology; computational neuroscience; and VLSI design. Comprised of 40 chapters, this book begins with an introduction to mean field, Boltzmann, and Hopfield networks, focusing on deterministic Boltzmann learning in networks with asymmetric connectivity; contrastive Hebbian learning in the continuous Hopfield model; and energy minimization and the satisfiability of propositional logic. Mean field networks that learn to discriminate temporally distorted strings are described. The next sections are devoted to reinforcement learning and genetic learning, along with temporal processing and modularity. Cognitive modeling and symbol processing as well as VLSI implementation are also discussed.
This monograph will be of interest to both students and academicians concerned with connectionist modeling.

Natural Language Processing For Indian Languages

Ic-ETITE'20

This is a survey of the current machine translation research in the US, Europe, and Japan. A short history of machine translation is presented first, followed by an overview of the current research work. Representative examples of a wide range of different approaches adopted by machine translation researchers are presented. These are described in detail along with a discussion of the practicalities of scaling up these approaches for operational environments. In support of this discussion, issues in, and techniques for, evaluating machine translation systems are discussed.

A Survey of Commercial Machine Translation (Japanese to English) in the Manufacturing Industry

Proceedings of International Conference on Artificial Intelligence, Smart Grid and Smart City Applications

This book assembles fifteen original, interdisciplinary research chapters that explore methodological and conceptual considerations as well as user and usage studies to elucidate the relation between the translation product and translation/post-editing processes. It introduces numerous innovative empirical/data-driven measures as well as novel classification schemes and taxonomies to investigate and quantify the relation between translation quality and translation effort in from-scratch translation, machine translation post-editing and computer-assisted audiovisual translation. The volume addresses questions in the translation of cognates, neologisms, metaphors, and idioms, as well as figurative and cultural specific expressions. It reassesses the notion of translation universals and translation literality, elaborates on the definition of translation units and syntactic equivalence, and investigates the impact of translation ambiguity and translation entropy. The results and findings are interpreted in the context of psycho-linguistic models of bilingualism and re-frame empirical translation process research within the context of modern dynamic cognitive theories of the mind. The volume bridges the gap between translation process research and machine translation research. It appeals to students and researchers in the fields.

Trends in E-Tools and Resources for Translators and Interpreters

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