

# C O L I N G   B U D A P E S T

## PROCEEDINGS

of the

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in cooperation with

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## OPENING ADDRESS

It is my distinct pleasure to welcome all the contributors and participants of the 12th International Conference on Computational Linguistics here in Budapest. On behalf of our scientific community I would like to express our thanks to the International Committee on Computational Linguistics that after 17 years the COLING conference returned to Hungary again. Quite a few of you attended COLING'71 held in our country in 1971 under the pseudo-name CLIDE'71 that is Computational Linguistics In Debrecen. Most of you have come to us first time.

The application of computers to linguistics is one of the great challenges which we face. The importance of any progress in your field is well understood by the scientific communities. We all realize that the progress in computing catalyzed the convergence of three previously disparate areas: the theory of axiomatic reasoning, the study of mechanical computation, and the psychology of intelligence, i.e. the languages.

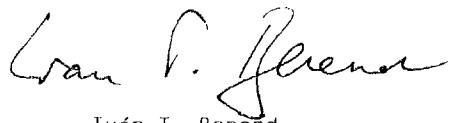
Since the publication of Gödel's famous paper in 1931 "On Formally Undecidable Propositions", the fundamental limits of our digital computers are also known. There are inherent undecidabilities in our formal languages, i.e. in our computers, independently of their size, speed or architecture. The two sentences "The following sentence is false" and "The preceding sentence is true" taken together have the same effect as the old Greek Epimenides-paradox about the Cretans.

Yes, we do know our limits. Still, we witnessed a fantastic progress of the application of computers to natural language processing. You have already climbed high mountains. Your computers can indeed give appropriate responses to spoken languages in many special cases. Your systems play important role in the compilation of modern encyclopediae, vocabularies, data bases, and new information systems.

The founding fathers of the Hungarian Academy of Sciences were fully aware of the fundamental importance of linguistics, thus we have an old but flourishing tradition of it. Mathematical schools in Hungary have deep traditions as well. Computational linguistics is a child - a son or a daughter, I don't know - of the marriage of linguistics and a special branch of mathematics. We are proud of the heritage of John von Neumann, Lipát Fejér, Frigyes Riesz, George Pólya, László Kalmár, and others, and we do hope that their "children" will be able to contribute to the progress of their field as the parents did.

In Hungary the west-part and the east-part are divided by the river Danube. In the last century the true founder of the Hungarian Academy of Sciences put a lot of effort into the building of a bridge, the Chain-Bridge, to connect, to bring closer to each other our East and West.

I do hope that COLING'88 in Budapest will serve as a bridge between experts of computational linguistics of West and East, North and South. I wish you a very successful meeting, deep and fruitful discussions. Have a nice time in Budapest.



Iván T. Berend

President of the Hungarian Academy of Sciences



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## INTRODUCTION

The biennial COLING conferences grow in their scope of coverage and in the number of paper submissions: this year, the reviewers faced a difficult task to evaluate 461 abstracts submitted by authors from 29 countries all over the world and to select 137 full papers and about 40 reserve papers to be published in the present volume. The selection had to be very strict; every abstract was reviewed by three referees and the final decision was made according to their assessments. Our intention was, on the one hand, not to organize too many parallel sessions (even four may seem too much, I am afraid), and, on the other, to give the opportunity to as many contributors as possible to present their results, at least in the form of an abstract published in the Proceedings. This led us to introduce (for the first time at COLING) the category of 'reserve' or 'alternate' papers, i.e. papers that were accepted for publication but will be presented only in case of some 'slot' in the programme. We hope that this arrangement will also stimulate broad discussions in the 'corridors', where the authors of the reserve papers can get a response to their written contributions.

I would like to extend my thanks to all the reviewers for the hard job, especially to those who made the efforts and formulated critical comments to the abstracts they had read, which helped the authors to understand the decisions, and, as the case may be, to improve the final versions. My special thanks go to the five advisors - Professors Aravind Joshi, Hans Karlsgren, Makoto Nagao, Petr Sgall and Wolfgang Wahlster, who undertook a painful task to read all the abstracts thematically belonging to their domain of interest and to recommend which papers were to be accepted from a broader perspective; their recommendations helped me a lot, especially when the assessments of the other reviewers were not unanimous.

Last but not least, I would like to thank all those who submitted their abstracts for COLING 88 and thus showed an interest in our meetings; I do hope that those whose abstracts could not be included in this volume will overcome their disappointment and will not be discouraged to show their interest again at COLING 1990!

Eva Hajičová  
Programme Chairperson

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