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COLINS AI

COMPUTATIONAL LINGUISTICS AND INTELLIGENT SYSTEMS

Proceedings of the 6th International Conference, COLINS-2022.
Volume I: Main Conference

Gliwice, Poland
May, 2022, 12-13

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The 6th International Conference on COLINS 2022 is organized by:
- Politechnika Śląska, Poland
- Lviv Polytechnic National University, Ukraine
- National Technical University «Kharkiv Polytechnic Institute», Ukraine
- Osnabrück University, Germany
- Institut Galilée of Université Paris 13, France
- Ukrainian Scientific and Educational IT Society, Ukraine

This volume represents the proceedings of the Workshop Conference, with Posters and Demonstrations track, of the 6th International Conference on Computational Linguistics and Intelligent Systems, held in Gliwice, Poland, in May 2022. It comprises 124 contributed papers that were carefully peer-reviewed and selected from 167 submissions. The volume opens with the abstracts of the keynote talks. The rest of the collection is organized in two parts: (I) Computational Linguistics; (II) Intelligent Systems. Parts I contain the contributions to the Workshop COLINS Conference tracks, structured in three topical sections: (1) Plenary Section; (2) Natural Language Processing; (3) Computer-Based Discourse Analysis and Social Media Analysis; (4) Corpus Technologies, Ontologies and Computer Lexicography. Parts II contain the contributions to the Workshop COLINS Conference tracks, structured in four topical sections: (1) Plenary Section; (2) Machine Learning Technology; (3) Applied Intelligent Systems.

COLINS Conference is intended to attract researchers with a strong background in the field of on Computational Linguistics and Intelligent Systems. The COLINS Conference is soliciting literature review, survey and research papers including, whilst not limited to, the following areas of interest:
- Computational Linguistics
- Intelligent Systems

The Conference took the form of oral presentations of peer-reviewed regular papers. Proceedings of the COLINS Conference will submitted to CEUR-WS.org for online publication.

Submitted papers will be peer-reviewed by three scholars based on technical quality, relevance, originality, significance, and clarity. If necessary, a fourth, additional reviewer will be involved. The Program Committee will use these reviews to determine which papers will accepted for presentation at the conference. The result of the reviewing will be announced to the submitting authors by email, along with reviewer comments, if any. Only accepted papers, which will be presented at the conference, shall submitted to CEUR-WS.org for online publication.

The Editorial team includes a highly-qualified academics and industry professionals (PhD or Doctoral graduates).

Further information can find at:
- http://colins.in.ua/
- https://www.youtube.com/channel/UCr74OG8oKlJE_ETVxRC9lPQ
- https://www.facebook.com/Computational-Linguistics-and-Intelligent-Systems-Conference-1403297853078941

Preface

It is our pleasure to present you the proceedings of the Workshop Conference of COLINS-2022, the fourth edition of the International Conference on Computational Linguistics and Intelligent Systems, held in Gliwice (Poland) on May 12-13, 2022.

The main purpose of the CoLInS conference is a discussion of the recent research results in all areas of Natural Language Processing and Intelligent Systems Development.

The conference is soliciting literature review, survey and research papers comments including, whilst not limited to, the following areas of interest:

Category 1. Computational Linguistics
Subcategory 1.1. Natural Language Processing
- Machine translation;
- Text summarization;
- Named-entity recognition;
- Information retrieval;
- Text classification;
- Sentiment analysis;
- Automated speech recognition;
- Question answering system;
- Topic modeling;
- Text generation;
- Text understanding;
- Text simplification;
- Spam filtering technology;
- Error correction;
- Chatbots and conversational agents.
- Voice cloning, voice encoders, voice readers, voice output communication aids.

Subcategory 1.2. Corpus Technologies, Ontologies and Computer Lexicography
- Corpus creation;
- Corpus annotation;
- Corpus-based translation;
- Collocation identification and extraction;
- Thesauri, ontologies, ontology building;
- Ontology models and ontological graphs;
- Lexicographic systems.
- Digital learner's dictionaries;
- General and special purpose digital dictionaries;
- Digital dictionary-based research;
- Virtual lexicographic laboratories;
- Dictionary-writing systems;

Subcategory 1.3. Computer-Based Discourse Analysis and Social Media Analysis
- Discourse organization;
- Critical discourse analysis;
- Sarcasm detection;
- Opinion mining and emotion detection;
- Essay grading;
- Unambiguity / wordplay identification;

- Computer-mediated communication;
- Digital multimodal text creation;
- Statistical text analysis;
- Conceptualization;
- Fake news detection;
- Text authorship identification;
- Good/evil character traits identification.

Category 2. Intelligent Systems
Subcategory 2.1. Applied Intelligent Systems
- Data mining & knowledge management;
- Data visualization & summarization;
- Web search & information retrieval technology;
- Recommender systems;
- Crowdsourcing;
- Human-agent negotiation;
- Knowledge representation and reasoning;
- Search engineering marketing;
- Multiagent systems;
- Planning, routing, and scheduling;
- Model-based reasoning;
- Reasoning under uncertainty;
- Search engine optimization (SEO technology);
- Application domain.
- Computer vision;

Subcategory 2.2. Machine Learning Technology
- Supervised learning;
- Unsupervised learning;
- Semi-supervised learning;
- Reinforcement learning;
- Decision trees;
- Classification;
- Regression;
- Artificial neural networks;
- Associative rules;
- Deep learning;
- Pattern recognition;
- Cluster analysis;
- Data mining.

The language of COLINS Conference is English.

The conference took the form of oral presentation by invited keynote speakers plus presentations of peer-reviewed individual papers. The papers were distributed among 93 external reviewers from France, Germany, The Netherlands, United States, United Kingdom, India, Moldova, Chech Republic, Poland, Bulgaria, Portugal, Serbia, Slovenia, Finland and Ukraine. The total number of reviews is 611. To take more correct decision regarding the acceptance or rejection the papers got 3-7 reviews. The peer review statistics is as follows: 94 papers (3 reviews), 44 papers (4 reviews), 23 papers (5 reviews), 4 papers (6 reviews), and 2 papers (7 reviews). There was also an exhibition area for poster and demo sessions. A Student section of the conference for students and PhD students ran in parallel to the main conference.

The conference gathered participants from different countries including Austria, Azerbaijan, Germany, Canada, Kazakhstan, Malaysia, Nigeria, Poland, Turkey, Ukraine, United Kingdom and United States.

This year Organizing Committee received 167 submissions, out of which 124 were accepted for presentation as a regular papers. The papers are submitted to the following tracks: Natural Language Processing (27), Corpus Technologies, Ontologies and Computer Lexicography (17), Computer-Based Discourse Analysis and Social Media Analysis (19), Applied Intelligent Systems (4); Machine Learning Technology (37).

These papers and extended abstracts were published in this Volume I of COLINS 2022 proceedings.

The conference would not have been possible without the support of many people. First of all, we would like to thank all the authors who submitted papers to COLINS 2022 and thus demonstrated their interest in the research problems within our scope. We are very grateful to the members of our Program Committee for providing timely and thorough reviews and, also, for being cooperative in doing additional review work. We would like to thank the Organizing Committee of the conference whose devotion and efficiency made this instance of COLINS a very interesting and effective scientific forum.

May, 2022

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