

International Conference on Grammatical Inference 2018: Preface

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This proceedings contains the works that have been presented at the 14th International Conference on Grammatical Inference (ICGI), held in Wrocław, Poland, from September 5 through September 7, 2018. Out of the 17 full papers, 11 were accepted for publication in the proceedings and presentation at the conference. In addition to these works, four extended abstracts were accepted for a short presentation at the conference and two extended abstracts—for a poster session. The extended abstracts are not included in the proceedings, but can be found online at <http://icgi2018.pwr.edu.pl>. The proceedings contains a diverse range of topics in grammatical inference, such as: new ideas in automata learning, inferring context-free grammars, learning weighted automata and other soft classifiers, as well as the application of these methods in solving hard tasks and modeling complex systems. This year the conference was held in collocation with the annual symposium organized by the Polish Bioinformatics Society (<http://ptbi2018.pwr.edu.pl>), which encouraged works with new results in linguistic modeling in bioinformatics.

The conference program included three keynotes from the top researchers in the field. Colin de la Higuera from Nantes University presented the historical view of grammatical inference and helped us to understand which of these ideas were prevailing, why they were convincing at some point and failed in many cases. Johannes Söding from the Max Planck Institute for Biophysical Chemistry presented new algorithms and tools for the large-scale sequence analysis of metagenomics data. Frits Vaandrager from Radboud University demonstrated how active automata learning was emerging as an effective technique for obtaining state machine models of implementations of network and security protocols, and finding standard violations in these implementations. Finally, a special guest of the conference, Gniewosz Leliwa from Fido.ai, who gave a talk on a novel, symbolic approach for using grammar parsing in two areas: the context-based information extraction and the cyberbullying detection.

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