Reducing the Administrative Burden in Healthcare: Speech and Action Recognition for Automated Medical Reporting

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Abstract

The administrative burden in routine healthcare processes is high, but for communication among care providers the reporting about patient consultations is very essential. In order to reduce this burden we have started the Care2Report research program (www.care2report.nl) that aims at a automated medical reporting based on multimodal (audio, video, bleutooth) recording of a consultation, followed by knowledge representation, ontological conversation interpretation, and finally the generation and uploading of the report in the electronic medical record system.

In this keynote I will present the aims and goals of the Care2Report research program, the various linguistic intelligence pipelines, its current functional and technical architecture, and the achievements so far. The linguistic pipeline research will be illustrated by (i) a generic method for the design of trusted cloud pipelines in medical reporting, (ii) the generation of medical guideline ontologies for the matching of the consultation audio transcript, and (iii) the automated pseudonimisation of privacy related data by means of named entity recognition. We end with an outlook of the current research projects and experiments in healthcare institutions.

Bio: Prof. Sjaak Brinkkemper is full professor of Software Production at the Department of Information and Computing Sciences of Utrecht University, the Netherlands. He leads a group of about twenty-five researchers specialized in product software development and software entrepreneurship. The main research themes of the group are methodology of software production, implementation and adoption, and techno-economic aspects of the software industry. Brinkkemper has published about 10 books and over 200 papers in his research interests: medical informatics, healthcare software production, requirements engineering, software architecture, and method engineering.