The Potential of an Artificial Intelligence for Disability Advocacy: The WikiDisability Project

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Abstract. Human rights monitoring for people with disabilities is in urgent need for disability data that is shared and available for local and international disability stakeholders (e.g., advocacy groups). Our aim is to use a Wikibase for editing, integrating, storing structured disability related data and to develop a Natural Language Processing (NLP) enabled multilingual search engine to tap into the wikibase data. In this paper, we explain the project first phase.

Keywords. Machine learning, wikibase, disability, critical disability, advocacy, health informatics, disability informatics

1. Introduction

While reports about people with disabilities much of the available data (e.g., reports, raw data, case laws) is scattered [1]; the lack of availability of disability data has been identified as a major challenge hindering continuous disability rights monitoring [2,3] and exposing systemic discrimination [4]. Health informatics [5], machine learning [6], particularly Natural Language Processing (NLP) [7], can enable users to search for data [8-10] and find semantic similarities within disparate documents[11,12]. Our project aims to create a bilingual wikibase with a smart natural language search capability.

2. Methods

Deliberation between content experts in critical disability and the health informatics and computer science professionals, has led to an iterative definition of the domain and scope of the Convention on the Rights of Persons with Disabilities (CRPD) ontology.

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3. Results

The CRPD ontology is flexible to accommodate the CRPD articles in relation to disability legislations proper to specific jurisdictions and can be expanded to fit international contexts. The platform would have two types of users: information producer and information consumers. Information producers would be to upload data files to the platform. Information consumers would be able to use the platform smart search engine to search for documents using natural language.

4. Discussion

Multidisciplinary research in the domain of disabilities is challenging. An iterative process done in a collaborative atmosphere allows team members to elucidate ambiguities and for the team to face challenges and provide solutions.

5. Conclusion

Machine learning approaches are promising tools to address disability advocacy data needs. A first version of the CRPD ontology has been developed and the disability wikibase platform is underway.

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