Apply Data Visualization to Improve Ontology Modeling of Virology

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Virus Resource and Information Center, which belongs to Wuhan Institute of Virology, Chinese Academy of Sciences, has been collecting, systematically classifying and preserving different kinds of virus resources since 1979. Now it has been the largest center for viruses' culture collection in Asia. There are around 150,000 viruses stored in it including 45 families and 67 genuses. All these viruses have realized digitized management. Database of Chinese Virus Resource, which consists of 15 subdatabases, has been established and a related web service platform has been provided for scientists to search for virus data. Aiming at better curating and utilizing virus data, ontology technology of Artificial Intelligence is introduced to reconstitute data, accomplish the transformation of scientific data into knowledge and finally build knowledge base dependent on analyzing the knowledge hierarchy of virus taxonomy so as to expand the range of semantic notation.

However, during the application process of ontology, questions arose for ontology technology is in high demand for expertise of domain but we met with the difficulty in communication between computer engineers and biological virology experts due to different major and research fields. Aiming at bridging the gap between computer scientists and domain specialists, data visualization is introduced to the process of ontology development to show ontology model of virology data and make it convenient for experts to create and correct them. This presentation will briefly outline how to apply data visualization into ontology so as to better improve computer engineers' collaboration with virology scientists in ontology modeling of virology.

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