Call for Papers

The 1ˢᵗ IEEE International Workshop on Artificial Intelligence in Chinese Medicine Workshop (AI&TCM 2017)

Dalian, China, 12-15 October 2017

Workshop Chairs:

Siwei Yu, Wuhan University, China, manfisy@163.com

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SCOPE

A strategy of traditional medicine (TM) is to establish a knowledge infrastructure for knowledge-based policy-making, clinical decision-making，education, and research. We need to increase the availability of e-library, datasets, and knowledge bases through the Internet and other media. Also, Artificial intelligence and TM need to be combined to implement key technologies such as intelligent diagnosis and prescription recommendation.

The application of AI in traditional Chinese medicine (TCM) can be traced back to 1980's when the primary focus is on the development of expert systems, which brought out many research issues such as the automation of TCM diagnosis, TCM knowledge representation and reasoning, and TCM knowledge engineering. Recently, as the AI field made tremendous progress (e.g., breakthrough technologies such as deep learning and successful medical applications), the research of AI in TCM ushered in a new climax. For example, deep learning and image recognition technologies were used for intelligent diagnosis; e-libraries, ontologies, knowledge graphs and other large-scale repositories were constructed for knowledge services; KDD methods were used to gain insights from the TCM big data. AI in TCM will play a major role in the implementation of traditional medicine development strategy, but there is still a lot of R & D work to do. It is important is to attract the attention of experts from both TCM and IT and to strengthen cross-disciplinary collaboration.

Given this, we intend to organize a workshop on Artificial Intelligence in Chinese Medicine, focused on the latest research and the most challenging problems in this field. For example, how to use AI technology such as image recognition to achieve intelligent diagnosis; how to establish large-scale knowledge system for effective knowledge organization; and how to implement intelligent services such as intelligent search, clinical decision support, and health knowledge recommendation.

The topics may include:

- Analysis and simulation of the TCM thinking mechanism
- TCM knowledge representation and reasoning
- Analysis and organization of the TCM knowledge system
- Acquisition, integration, and sharing of TCM knowledge

- Ontologies, knowledge graphs, and other large-scale repositories for TCM
- Knowledge engineering methods and projects (such as crowdsourcing, data wiki, etc.)
- Sustainable development mechanisms of TCM knowledge systems, such as automatic updating, self-learning, and self-evolution
- Digitization methods of TCM ancient books, medical records, scientific records and other information sources
- Speech recognition for TCM clinic (such as case record input)
- Theory and methodology of TCM big data
- Collection and processing of TCM big data
- Analysis and utilization of TCM big data
- TCM text (especially classics) mining
- Analysis and mining of TCM case records
- The sharing and public service of TCM big data
- Practical systems and applications of TCM big data
- Automation of the four TCM diagnostic methods
- Intelligent diagnosis based on image recognition
- Analysis and Simulation of TCM syndrome differentiation and treatment
- Intelligent search for TCM knowledge
- Intelligent recommendation of TCM prescription and other knowledge
- TCM clinical decision-support systems
- TCM knowledge service and intelligent consulting systems (such as cloud platforms, mobile APPs)
- Successful use cases of AI and TCM for difficult diseases, chronic diseases, and major diseases
- TCM informatics standardization (standards and technical specifications)

Submission Guidelines:
Papers have to follow IEEE format requirements and have to be written in English.
Full details of submission procedure are available at:
http://healthcom2017.ieee-healthcom.org/cfp .
Submission Link: https://www.edas.info/newPaper.php?c=23463

Important Dates:
Paper submission deadline: **10 Aug. 2017**
Notifications: **31 Aug. 2017**
Camera Ready submission: **12 Sept. 2017**

Potential List of Invited Speakers:
- TBD

TPC Members:
- Tong Yu, Information on Traditional Chinese Medicine, China Academy of Chinese Medical Sciences, China
- Siwei Yu, Wuhan University, China

- Zhisheng Huang, Vrije Universiteit Amsterdam, Nederlanden
- Zhengxing Huang, Zhejiang University, China
- Dan Xie, Hubei University of Chinese Medicine, China
- Xuezhong Zhou, School of Computer and Information Technology, Beijing Jiaotong University, China
- Hai Long,Ontologies in Medicine(Onto-Med), Institute for Medical Informatics,Statistics and Epidemiology(IMISE), Germany
- Jie Zheng, Shulan Medical Group, China
- Yuxin Mao, School of Computer and Information Engineering, Zhejiang Gongshang University, China
- Yueguo Gu, Chinese Academy of Social Sciences, China
- Jinguang Gu, Wuhan University of Science and Technology, China
- Qinan Hu, Chinese Academy of Social Sciences, China
- Jinghua Li, Information on Traditional Chinese Medicine, China Academy of Chinese Medical Sciences, China
- Qi Yu, Information on Traditional Chinese Medicine, China Academy of Chinese Medical Sciences, China
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