

# UKC2014

International Workshop on  
Universal Knowledge Core  
知识建模与知识管理国际研讨会

Jilin University  
Changchun, China  
October 12-15, 2014

# Schedule

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## October 13, 2014 (Room A521)

- 9:00 – 9:10 ● Opening Remark  
Prof. Jihong Ouyang, Vice Dean, College of Computer Science and Technology, Jilin University, China
- 9:10 – 10:30 ● Knowledge in Diversity: Vision and Tools  
Prof. Fausto Giunchiglia, University of Trento, Italy
- 10:30 – 11:00 ● Group Photo & Coffee Break
- 11:00 – 12:20 ● Domain Development with DERA  
Dr. Vincenzo Maltese, University of Trento, Italy
- 12:20 – 14:00 ● Lunch
- 14:00 – 15:30 ● Natural Language Processing for Open Data Integration  
Dr. Gábor Bella, University of Trento, Italy
- 15:30 – 15:50 ● Coffee Break
- 15:50 – 17:00 ● Linguistic Resource Maintenance via Gamification  
Hanyu Zhang, University of Trento, Italy

## October 14, 2014 (Room A515)

- 9:00 – 10:30 ● Using Semantic Technology and Gamification to Facilitate Learning in MOOCs. Prof. Hao Xu, Jilin University, China  
Working Group on "Chinese LKC Development"
- 10:30 – 11:00 ● Coffee Break
- 11:00 – 12:30 ● Working Group on "Chinese NLP"&  
Working Group on "Gamification"
- 12:30 – 14:00 ● Lunch
- 14:00 – 15:30 ● Working Group on "Open Data"
- 15:30 – 16:00 ● Coffee Break
- 16:00 – 17:30 ● Open Discussion on Possible Thesis Topics
- 17:30 – 17:45 ● Closing Remark  
Prof. Yanchun Liang, Deputy Director of Institute of Computer Science Technology, Jilin University, China

# Fausto Giunchiglia

Title: **Knowledge in Diversity: Vision and Tools**



## ABSTRACT

This talk will present our going work, started more than 6 years ago, whose goal is enable data integration among data collected in different cities, about different but related topics, in different languages, thus enabling cross language data management. The first part will present the theoretical foundations. The second part will discuss the concrete steps towards making this project concrete, namely the creation of a no-profit organization whose goal will be to enable interoperability among the different sites.

## BIO

Fausto Giunchiglia is full professor of computer science at the University of Trento (Italy). His recent areas of interest are the use of semantics for managing knowledge diversity in the large and social computations, i.e. how to study and exploit the impact of ICT on organizations, people and society, towards the construction of a better society. He has published around 50 journal papers; more than 200 publications overall; more than 30 invited talks; chair of around 10 international events. He has actively participated in many EU funded projects and acted as coordinator for KnowledgeWeb, OpenKnowledge, Insemtives, LivingKnowledge and SmartSociety.



# Vincenzo Maltese

Title: **Domain Development with DERA**

## ABSTRACT

Ontologies have been used in several fields, especially as a means to favor interoperability and as basis for automated reasoning. With this talk we present a methodology, centered on the notion of entity, for the development of ontologies which are necessary to describe the relevant entities of a domain. For instance, in the geographical domain relevant entities will include land forms, bodies of water, populated places, and administrative divisions. The methodology, called DERA, aims at the development of ontologies of entity classes, relations and attributes. DERA is an evolution of the faceted approach borrowed from library science that is known to guarantee the creation of high quality, extensible and scalable ontologies.

## BIO

Vincenzo Maltese received his PhD in Information and Communication Technologies (ICT) in March 2012 at the doctorate school of the University of Trento (Italy), where he is currently a research fellow. He accumulated in the past years significant experience in writing, conducting and managing projects. In fact, he participated in several national and international projects covering various roles (co-author, contributor, work package leader, project manager, and coordinator). Among them, it is worth mentioning the FET EU project Living Knowledge (graded EXCELLENT by the EC, in which he acted as WP leader and as Interdisciplinary & Communication Manager) and the FET IP EU project SmartSociety (graded EXCELLENT by the EC at the first review, in which he is the project manager). His main area of expertise is in the design, creation, maintenance and exploitation of knowledge resources with techniques ranging from Knowledge Representation, Knowledge Organization and linguistics. He is co-author of the semantic matching open source tool S-Match and GeoWordNet. He has published around 30 scientific publications, including 5 journal papers.

# Gábor Bella

Title: **Natural Language Processing  
for Open Data Integration**



## ABSTRACT

‘Open Data’ is any data of general interest to citizens, published electronically and in a structured form by public administrations all around the world. Such data is heterogeneous as it is released in different formats by different institutions, different countries, even in different languages. ‘Linking’ of Open Data is about understanding the meaning of data items and datasets by mapping them to known concepts and entities, as well as about discovering meaningful relations among them. Because we tend to produce more data than we can manually process, the ultimate goal is to extract such meanings and relations from raw data with as little human intervention as possible. Our group at the University of Trento is developing a semi-automatic solution to data linking and integration based on ontological and linguistic resources, semantic matching, natural language processing (NLP), and machine learning. In my talk I present our general approach as well as the specific subproblem of performing linguistic processing on Open Data. In particular, I will show how NLP on structured data and metadata deviates from mainstream NLP approaches usually applied to longer pieces of text (news articles, web pages, etc.).

## BIO

Gábor Bella received his PhD in 2008 in France on the application of knowledge representation to the modelling of the world's writing systems. He is currently a research fellow in computer science at the University of Trento, Italy. His area of research is natural language processing and semantic analysis of multilingual text. Moreover, he is coordinating an international effort on bringing together expertise and resources for multilingual NLP on structured textual data. For this purpose, he is leading the development of a multilingual open source NLP tool and is also supervising a group of researchers and developers working on a system for semantic integration of multilingual Open Data.



# Hanyu Zhang

Title: **Linguistic Resource Maintenance via Gamification**

## ABSTRACT

A linguistic resource is a special kind of database containing complicated structure, and it plays a vital role in semantic applications (e.g. semantic web). In the early stage, several small-scale ontologies were built manually by experts. Hence the data were created with very high quality. While, nowadays, following the application requirements, a linguistic resource is growing bigger and bigger. Thus how to set a long-term maintenance work of such a large dataset becomes a challenge. In this presentation, we will bring forth an idea, which is adopting Gamification to improve the overall quality of a linguistic.

## BIO

Hanyu Zhang received his master's degree in Data, Media and Knowledge from University of Trento, Italy, where he then worked as a pre Ph.D for half a year. His main research interests include linguistic resources and ontologies. He is currently undertaking his Ph.D research on knowledge maintenance via gamification and word games at the University of Trento.



## Hao Xu

Title: **Using Semantic Technology and Gamification to Facilitate Learning in MOOCs**

### ABSTRACT

Massive Open Online Courses (MOOCs) are disruptively changing the ways of teaching and learning. In the meantime, there are massive associated multi-lingual learning resources derived from MOOCs which are produced and consumed by both learners and instructors, e.g. lecture notes, comments, Q&As, etc. In this talk, we will first present our approach to managing diverse derivative knowledge (metadata) of MOOCs. Then we apply gamification elements and game thinking to design MOOCs platform to facilitate learning and universal/local knowledge dissemination.

### BIO

Hao Xu is an associate professor at college of computer science and technology, Jilin University, and a courtesy professor of KnowDive group, University of Trento, Italy. He received his PhD in Information and Communication Technologies (ICT) in November 2011 at department of computer science and information engineering, University of Trento, Italy. He has published more than 20 indexed journal and conference papers. His research interests include semantic annotation, data analysis and gamification.

# Committee

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