

平成26年度北海道大学情報基盤センター共同研究成果報告書

1. 研究領域番号 A5

2. 研究課題名 集合知ベンチマークに関する研究: CIbench Contest

3. 研究期間 平成26年4月1日～平成27年3月31日

4. 研究代表者

氏 名	所属機関・部局名	職 名	備 考
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5. 研究分担者

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Jarbas Lopes Cardoso Junior	CTI, Brazil	研究員	
Michael Hohne	De Heren Van Design (オランダ)	R&D project manager	

6. 共同研究の成果

下欄には、当該研究期間内に実施した共同研究の成果について、その具体的内容、意義、重要性等を、共同研究申請書に記載した「研究目的」と「研究計画・方法」に照らし、800字～1,000字で、できるだけ分かりやすく記載願います。文章の他に、研究成果を端的に表す図表を貼り付けても構いません。なお、研究成果の論文・学会発表等を行った実績（発表等の予定を含む。）があれば、あわせて記載して下さい。

During H26, under the Cibench Contest, we constructed a collective intelligence analysis system and promoted collective Intelligence analysis and classification under the event series "CI@PracticeDay". We have been providing a total of collective intelligence dataset produced by NII and CTI (Brazil). We reported in the CI@PracticeDay 2014 book (ISBN:978-4-86049-067-6) [1] a collective intelligence classification of for large-scale system including social media management, semantic-based retrieval and collective intelligence sharing methodologies. We started to encourage education and research in collective intelligence and social media retrieval based on large open test collections [2,3] in Brazil. Additional data set will be produced in 2015 in Thailand on 21st may 2015 (CI@PracticeDay Thailand). The current site promoted by Brazil is <http://www.cti.gov.br/CI-PracticeDay/tiki-index.php?page=HomePage>. We started to setup an open community among industry, academia, and government for the exchange of research ideas on social media access in Japan, Brazil, France and Thailand. This will enable to increase the availability of appropriate evaluation techniques for use by industry and academia, including development of new collective intelligence evaluation techniques more applicable to current social media systems.

During H26, we had a Progress Meeting (Sept 16 and 17 2014) at the Information Initiative Center on our collaborative project "Research on collective intelligence benchmark: Cibench". Skill2share environment and MindFlow Environment were presented by Michael Hohne, researcher in the collaborative project. Skill2share enables community of users (Students, Citizens) to share problem-solving based on collective intelligence management and monitoring. MindFlow is a platform for collective intelligence-based stress management (individual or community). These two examples of Collective Intelligence-based systems enabled to collect data set for the Cibench.

The collective intelligence benchmark enables to filter a stream of social media documents using a dynamic set of exact and approximate semantic and collective intelligence match queries.

Our goal has been to maximize the throughput with which social media documents which are disseminated to active queries. Whenever a new social media document is shared, the collaborative service could quickly determine all queries satisfied by it. Each query is represented as semantic and collective intelligence features, and metadata and semantic/collective intelligence features characterize each social media document. Three types of semantic/collective intelligence matching are supported: exact matches, approximate matches under an edit distance constraint, and approximate matches under a Hamming distance constraint. The problem becomes challenging when the query set is big and changes frequently.

We provided a code submission system under the CI@PracticeDay site that allows teams to upload their code and run it on our test machine, along with a leaderboard that shows the relative ranking of each of the teams. Following 2014, 2015 Cibench will be launched soon for the period June-October 2015.

References:

- [1] Frederic Andres, Oscar Salviano, CI@PracticeDay 2014, NII 2015年3月 ISBN:978-4-86049-067-6,91 pp
- [2] Frederic Andres, Michel Hohne, Oscar Salviano, MindFlow: A Collective Intelligence-based System for Helping Stress Pattern Diagnosis, XIII International Conference on Health Informatics and Health Information Management, Brazil, 2015年2月
- [3] Jarbas Lopes Cardoso Jr, Frederic Andres, Alexandre Guitton, Asanee Kawtrakul, and Silvio E. Barbin Collective Intelligence-based Early Warning Management for Agriculture, XIII International Conference on Agricultural and Environmental Engineering, Brazil, 2015年2月