

How geographic was GikiCLEF? A GIR-critical review

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ABSTRACT

In this paper we draw a balance of GikiCLEF as far as its appropriateness for the evaluation of GIR systems is concerned. We measure its degree of dealing with geographic matter, and offer GIRA, the final resource, for GIR evaluation purposes.

Categories and Subject Descriptors

H.3 [Information Storage and Retrieval]: H.3.3 Information Search and Retrieval

General Terms

Algorithms, Design, Evaluation

Keywords

Evaluation, Question Answering, Geographical IR, Wikipedia, Crosslinguality, Multilinguality

1. INTRODUCTION

As proposed in [5], a new track in QA@CLEF was organized in 2009 as a follow-up of the GikiP pilot track in GeoCLEF 2008 [6] with the purpose of continuing the evaluation of geographically complex queries (either stated as ad hoc IR topics or open list questions). This goal, however, was met with mixed success [3, 4, 1].

We provide a very short description of GikiCLEF and its resources, with a look at the “geographicity” of the task and a discussion of the relationship of GikiCLEF and the GIR area, as well as measure up what was actually done compared to what the intentions of the proposers were.

2. TRACK DESCRIPTION

GikiCLEF participant systems were offered the following task against a Wikipedia collection in ten languages: they should answer difficult open questions which all imply, to a smaller or larger degree, a measure of geographical reasoning. Each answer was given by a Wikipedia page, along

with a list of justification pages in case the justification was not included in the answer page. In order to make it a truly multilingual venture, answers in any language were considered correct as long as the full justification had been found in at least one language.

The full topic set (with a couple of example topics) is publicly available from GikiCLEF’s site, <http://www.linguatca.pt/GikiCLEF/>, from where one can also download the pool(s) and SIGA, the GikiCLEF management system [4]. SIGA was deployed to help multilingual topic creation and assessment, as well as process submissions and provide final scores, and was offered to the community for the organization of further similar evaluation contests. The set of GikiCLEF resources can be downloaded as the GIRA package, released November 2009.

There were 17 runs submitted by eight participants, although about thirty groups showed interest when the initial task draft was published. There was exactly one participant each from Brazil, Germany, the Netherlands, Portugal, Romania, Spain, UK and the US (some of them were distributed teams so we are simplifying matters slightly here), so we have to say that the participation was pretty well distributed as to geographical distribution by country/language.

Evaluation measures were kept simple (and not geographic), designed to obey two constraints only: i) the more languages the participant systems provided answers in, the better, and ii) systems should not be penalized if there were no answers in a particular Wikipedia language. The score of a submitted run was therefore the sum, for each language, of precision times the number of correct (C) answers. For each language, the score was $C * C / N$ (so that one had a score for de, pt, etc, as $C_{de} * C_{de} / N_{de}$, $C_{pt} * C_{pt} / N_{pt}$, etc.). The winner run had a score of 182, the two following systems (96 and 91) were only semi-automatic, and the fourth run scored 25, while the worst three runs had a zero score.

As explained in the GikiCLEF overview papers already mentioned, the multilinguality bias of the GikiCLEF track was seriously flawed by the way the topic group chose their topics, which in fact resulted in a preference for English as a pivot language. But what concerns us here is not the crosslingual or multilingual aspects of GikiCLEF but how it fared as an evaluation testbed for geographical reasoning.

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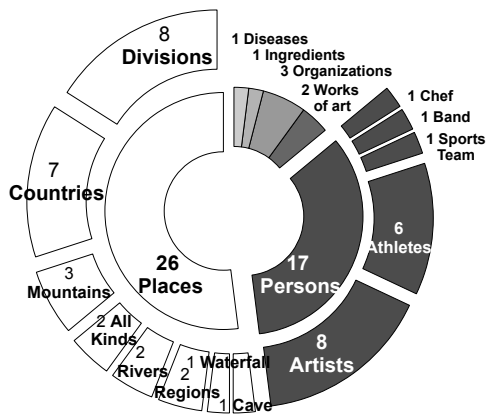


Figure 1: The expected answer type distribution of the topics

3. GEOGRAPHIC IN WHAT SENSE?

We take here the broad view that every question that is directly or indirectly associated with geographical knowledge (even if not requesting geographic places as answer) should be tackled by geographically-aware and geographically-conscious systems, and so GikiCLEF as an evaluation task should be interesting for the GIR community irrespective of the techniques used or the particular goals. But we have to understand more specifically in which sense(s) GikiCLEF was geographical and in which senses it is lacking for the purposes of the GIR community at large. The first approach to characterize the “geographicity” of the task is to actually look at the expected answer types in GikiCLEF. From Figure 1, we observed that the most frequent expected answer types (26) were places after all. Although we have to remember that countries for example are not necessarily strictly places, that is: they are or can be conceived equally easily as organizations, societies, ideas/cultures, or groups of people. As to granularity, one can see that countries are the largest “places”, while caves, ski resorts and rivers are found at the other end of the scale.

We also surveyed where in the earth were the topics located (again, assuming that this question makes sense, which is not always the case as argued for by [2]). Making the rough approximation that cultural bias corresponds to geographical bias, Figure 2 provides an idea of the places under GikiCLEF’s spotlight. Intersection areas in the figure correspond to either broader areas such as Latin America, specific presence of a culture icon in another culture (such as Picasso in American museums or in Hemingway in Italy), or to language-complex places such as Switzerland. However, this is a very gross distribution, since it mingles human (political) geography with natural geography, and in some cases the topics can be considered, though mixing two cultures, not geographical at all, such as Dutch bands named after a Bulgarian fighter.

What we intend to do next is study the need and kind of geographical reasoning implied by each topic, so that we can arrive at a sense of geographically challenging topics. Whether one should consider questions about nationality or culturally geographical is a matter of free choice, but there

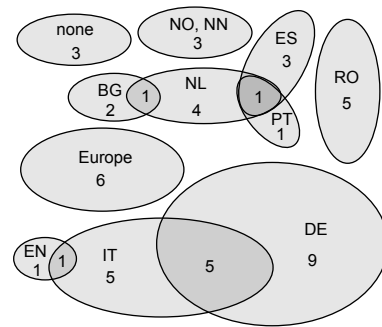


Figure 2: Language-bias of GikiCLEF topics

is no denying that languages (and people) mix both, so that in the end systems have to deal with it.

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