

QAMEL – Question Answering on Mobile Devices

Ricardo Usbeck and Axel-Cyrille Ngonga Ngomo

AKSW Group, University of Leipzig, Germany
usbeck|ngonga@informatik.uni-leipzig.de

The project. The market for mobile devices is booming. Frameworks such as Apple’s Siri and Google Voice have shown that question answering (QA) is a viable mode for interacting with these devices. However, most mobile QA frameworks are proprietary and thus difficult to integrate with SME applications.

QAMEL¹ will develop a resource-aware and generic multi-modal question answering (QA) framework for mobile devices which accounts for limited resources on mobile devices. Our QAMEL framework will support speech, text and gestures as input. Moreover, we will use the distribution of the data to improve the execution of queries in both offline and online modes. The result will be an open-source framework that implements (1) multimodal QA, (2) feedback processing functionality as well as (3) prototypical extensions of the partners’ product suites and use case studies.

The project has an overall runtime of 36 months starting in November 2015. It consists of 9 work packages with 37 deliverables. The QAMEL project (E!9725) was approved and is funded by the Eurostars/ EUREKA scheme, supporting research driven SME actions.

The partners. Our consortium consists of five partners from three different countries, namely Korea, Switzerland and Germany. The swiss-based Ontos AG was founded in 2001 and works on semantic technologies with a focus on information extraction (OntosMiner), RDF storage (OntoQUAD) and Ontos Eiger. In the QAMEL consortium, we will further develop a resource-aware, mobile version of the OntoQUAD store.

The University of Leipzig and its AKSW research group has developed a large number of high impact frameworks (e.g., LIMES, OntoWiki, FOX) and counts a leading research facility in the area of information extraction and question answering worldwide. Within QAMEL, AKSW will develop the core QA engine for mobile devices.

The Korea Advanced Institute of Science and Technology (KAIST) and its research group SWRC is a leading research group in Korea. For, example it leads the OKBQA² project and the ongoing WiseKB project which focuses on constructing self-evolving KBs and QA platforms. SWRC will provide means to semantify the Web as well as mobile-device data to enhance QA capabilities.

Saltlux is a leader in the Semantic, Search, Machine Learning and Big Data fields in the Korean Market with 600+ B2B customers. Saltlux is also active in

¹ <http://qamel.eu/>

² <http://www.okbqa.org/>

the B2C market (3+ years) with a mobile application for Content Curation and News Recommendation (Ziny.us) and is now targeting the global market for a briefing application powered by QAMEL technologies.

Finally, the German bitstars GmbH develops approaches for HCI and Computer Vision and has developed AR-enabling technologies, including DroidAR SDK (to be used in QAMEL) which is used by thousands of users worldwide. bitstars' HoloBuilder is a Web editor to create AR and VR content and is aimed at consumers and businesses.

The use cases. Within QAMEL we are going to tackle three use cases including 1) the Ontos-Eventos use case on news publishing and consumption. We strive to develop a new Eventos mobile app for Android, which will be evaluated in a first user study and applicable benchmarks. 2) bitstars will create interactive augmented reality (AR) and virtual reality (VR) applications specifically aimed at mobile users. As a result of this project, bitstars will provide a framework to visually present the answers to queries posed by the user, thereby providing a more natural and intuitive feedback. Namely, HoloPlayer, a tool for AR and VR on the smartphone and tablet as well as devices such as Google Glasses, Oculus Rift or the new HoloLense. 3) Saltlux has a news aggregators service, called Briefy, and plans to use QAMEL to extend it as a full Briefing Personal Service, including a summary of news, mails, social networks, briefing incoming schedule with retrieval and aggregation of related needed information like Contacts, Maps, Addresses etc. Especially, we are looking forward to a special edition tailored towards the Winter Olympic Games 2018.

The achievements so far. So far, the QAMEL consortium created an initial architecture suitable to all three use cases and defined requirements from use cases and user studies.³ Despite the fact that the QAMEL project is only in month 6 of 36 project month, we could already show improvements to computing semantic similarity, federated querying and question answering.⁴

The networking session. Within the networking session, we want to tackle three issues. First, we want to present and discuss the efforts as well as the mobile design so far and receive feedback from other companies and researchers. This will help us improve our open source platform, disseminate knowledge about the project to interested communities outside the consortium and maybe match our efforts with needs from other projects. Second, we will describe our efforts towards novel benchmarks for QA⁵ as well as standardisation for natural language interfaces for the Web of Data.⁶ Finally, we will discuss opportunities for researchers and companies to interact with QAMEL (both as an open-source platform and an initiative for better QA systems) and its consortium in terms of collaboration, usage and future proposals in programs like H2020, Eurostars or national funding schemes.

³ <http://qamel.eu/deliverables/>

⁴ <http://qamel.eu/publications/>

⁵ <http://qald.sebastianwalter.org/index.php?x=challenge&q=6> and <http://www.okbqa.org/>

⁶ w3.org/community/nli/