Smarter Mobile Apps through Integrated Natural Language Processing Services

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Abstract	Smartphones are fast becoming ever-present personal assistants. Third-party `apps' provide users with nearly unlimited customization options. A large amount of content read on these devices is text based -- such as emails, web pages, or documents. Natural Language Processing (NLP) can help to make apps smarter, by automatically analyzing the meaning of content and taking appropriate actions on behalf of their users. However, due to its complexity, NLP has yet to find widespread adoption in smartphone or tablet applications. We present a novel way of integrating NLP into Android applications. It is based on a library that can be integrated into any app, allowing it to execute remote NLP pipelines (e.g., for information extraction, summarization, or question-answering) through web service calls. Enabling a separation of concerns, our architecture makes it possible for smartphone developers to make use of any NLP pipeline that has been developed by a language engineer. We demonstrate the applicability of these ideas with our open source Android library, based on the Semantic Assistants framework, and a prototype application `iForgotWho' that detects names, numbers and organizations in user content and automatically enters them into the contact book.
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