

Talking to your Virtual Assistant about anything

Conversational interfaces and virtual assistants are now part of our lives due to services such as Amazon Alexa, Google Voice, Microsoft Cortana, etc. Thus, translating natural language queries and commands into an executable form, also known as semantic parsing, is one of the prime challenges nowadays in natural language understanding. In this talk, I would like to highlight the main challenges and limitations in the field of semantic parsing, and to describe ongoing work that addresses those challenges. First, semantic parsers require information to be stored in a knowledge base, which substantially limits their coverage and applicability. Conversely, the web has huge coverage but search engines that access the web do not handle well language compositionality. We propose to treat the web as a KB and compute answers to complex questions in broad domains by decomposing the question into a sequence of simple questions, extract answers with a search engine, and recompose the answers to obtain a result. Second, deploying virtual assistants in many domains (cars, homes, calendar, etc.) requires the ability to quickly develop semantic parsers. However, most past work trains semantic parsers from scratch for any domain, while disregarding training data from other domains. We propose a zero-shot approach for semantic parsing, where we decouple the structure of language from the contents of the domain and learn a domain-independent semantic parser.