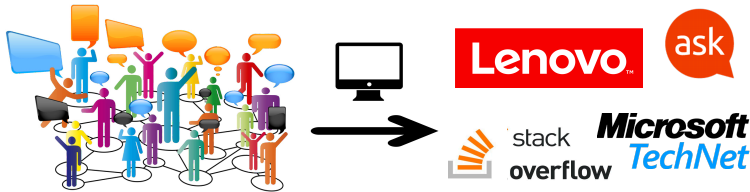


INTRODUCTION



Motivation: Tech companies have developed tech support discussion forums for users to post technical issues and seek for advice and solution.

Our goal: Given a user posted question on forum, can we automatically generate helpful responses and give real-time tech support?

EXAMPLE

(QT) AC adapter question
(QC) I have a Lenovo Thinkpad edge 15. I bought it from Germany, with a 65w ac adaptor. The voltage in Germany is 220v. It was working very well there. And my Thinkpad is not working with the same adaptor while the voltage here is 110v. Theoretically it should work. What is the problem?

(A1) Maybe your adapter went bad, can you test it on another ThinkPad? According to Lenovo's the adapter is compatible with following platforms ...

(Q1) The Adapter is working well. I tested with a voltage meter. It shows a message that Adapter is not correct and ask me to connect the right adapter.

(A2) Very Weird ... Support page says yours came with DOS license, depending on the OS you are using to trying updating your Power Manger.

(Q2) But I cannot open the PM utility/wizards ... Power management drive is installed properly.

(A3) I can see what you did wrong. You just extracted the package and probably didn't run it, depending on which Win 7 version, run setup from the folder. Further, I wanted you to install Power Manager, but from the look of it you probably extracted Power Management driver.

(Hyperlink to) **Lenovo document of Power Manager**



An example from the Lenovo Tech Forum, A2 refers to a document of Power Manage from Lenovo Support.

CHALLENGES

(1) Questions and responses are long-text.

Questions and responses/solutions on the tech support forums are often long-text, and have irrelevant information with the real problem.

(2) Responses are very different from questions of semantic meanings.

Responses are in different semantic spaces from the questions and need knowledge from external sources of the domain (e.g., user guide, manuals, documents) to generate.

(3) Methods cannot directly be applied to create long-text and correct semantics.

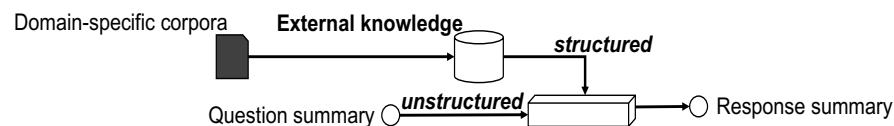
A thread of discussion starts from a question post and often follows with a series of responses (see example). During the process, the questioner can describe the problem with additional information (follow-up questions).

POTENTIAL IDEAS

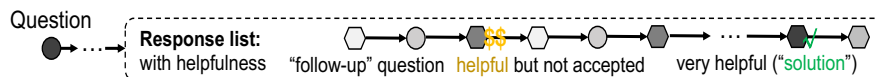
(1) Generating long-text questions and responses: Add question summary and response summary as bridges to connect the long-text question post and response post.



(2) Generating responses with external knowledge: Utilize the massive unstructured domain-specific corpora (e.g., developer documents) as external knowledge sources.



(3) Learning helpfulness from response series: Learn helpfulness signals by modeling the series of response sentences to improve the quality of response generation process.



DATASET

	LenovoForum	AskUbuntu
Questions	86,394	332,914
Responses	334,387	1M +
Solutions	17,925	219,756
Q-Length	103	51
A-Length	53	37
Vocabulary	23,072	57,982
Keywords	✓	✓
Titles	✓	✓

ACKNOWLEDGEMENT



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