

論 文 内 容 の 要 旨

博士論文題目 Statistical Approach^{to} Robust Chat-oriented Dialog Systems
(邦題：頑健な雑談対話システムのための統計的手法に関する研究)

※ 論文題目が外国語の場合はワープロ等を用いること。また、その邦文を論文題目の下に（ ）で記入すること。

氏 名 Lasguido Nio

要 旨

This thesis describes the design and evaluation of a new statistical model for building robust dialog systems. Conventional chat-oriented dialog system requires a well hand-craft rule which requires a lot of humans work, especially when the dialog try to accommodate a various topics. A current statistical approach in the chat-oriented dialog should dealing with vast human language, therefore there is always a case when the system end up giving an uncorrelated response because it couldn't find the user query match in conversation database. Moreover, relying on the unfiltered conversation database also resulting in the unnatural conversation. Given this challenges, in this work, we try to scale up the conventional statistical model for chat-oriented dialog system. Dealing with the unnatural response, we utilize the real human-to-human conversation examples from movie scripts and Twitter conversations. Our goal here is to build a conversational agent that can interact with users in as natural a fashion as possible, while reducing the time requirement for database designand collection. Next we also deal with the case when the user query is not available in the database (out of example; OOE). Here we approach this problem with the response generation approach. We propose a new statistical model for building robust dialog systems using neural networks to either retrieve or generate dialog response based on an existing data sources. System performance was evaluated based on objective and subjective metrics. It shows that the new proposed approaches have the ability to deal with user inputs that are not well covered in the database compared to standard example-based dialog baselines. Our experimental results also show

氏名	Lasguido Nio
----	--------------

(論文審査結果の要旨)

This thesis describes the design and evaluation of a new statistical model for building robust dialog systems. Conventional chat-oriented dialog system requires a well hand-craft rule which requires a lot of humans work, especially when the dialog try to accommodate a various topics. A current statistical approach in the chat-oriented dialog should dealing with vast human language, therefore there is always a case when the system end up giving an uncorrelated response because it couldn't find the user query match in conversation database. Moreover, relying on the unfiltered conversation database also resulting in the unnatural conversation. Given this challenges, in this work, we try to scale up the conventional statistical model for chat-oriented dialog system. Dealing with the unnatural response, we utilize the real human-to-human conversation examples from movie scripts and Twitter conversations. Our goal here is to build a conversational agent that can interact with users in as natural a fashion as possible, while reducing the time requirement for database designand collection. Next we also deal with the case when the user query is not available in the database (out of example; OOE). Here we approach this problem with the response generation approach. We propose a new statistical model for building robust dialog systems using neural networks to either retrieve or generate dialog response based on an existing data sources. System performance was evaluated based on objective and subjective metrics. It shows that the new proposed approaches have the ability to deal with user inputs that are not well covered in the database compared to standard example-based dialog baselines. Our experimental results also show that the proposed filtering approach effectively improves theperformance.

The research proposed solutions to the problems which haven't been solved and resulted in two journal papers and 5 peer reviewed international conference papers.

As a result the thesis is sufficiently qualified as Doctoral thesis of Engineering.