

A Review Paper on Smart Personal Assistant

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Abstract—The Smart Personal Assistant enables users to access e-mail and calendar notification using natural language speaks through a PDA interface. The user must present the system and enabling the user to conduct a dialogue in which it is affable to operate between these domains. The SPA is applied to an agent platform and includes a special PDA controller with plans for coordinating the accuse assistants and for encoding the system's speak model. The agent-based dialogue model is at an upper level of abstraction, enabling the domain free plans in the dialogue model to be reused in alter SPA systems.

Keywords—Siri, Cortana, Googlenow, Voice assistant

INTRODUCTION:-

Our research is mainly focused on natural language interaction with our smart personal assistant systems for use on mobile devices such as PDAs and mobile phones. Our acquaints Smart Personal Assistant (SPA) is a personal information address assistant that allow users with integrated access to e-mail, calendar and other information. The e-mail assistant, EMMA, described in Ho, Wobcke and Compton (2003), enables users to simply defines a rule base that is capable messages to be associated with a sorting folder for display, a priority and/or an decision to be taken. The calendar assistant enables users to define rules for proclamation many attributes of appointments. The SPA must present a unified interface to users so that they can switch without bounds between the various domains. In addition, though speech recognition systems have greatly improved in recent years, achievement is far from perfect, so dialogue model must be built to include mechanisms for recovery from speech recognition mistakes

SPA AGENT ARCHITECTURE:-

The SPA is used as a multi-agent system using JACK smart Agents TM, and for the e-mail and calendar task the wrapper assistant is used, a User Interaction Agent, and a special Coordinator agent that interpose communication between the user and the specific task assistants, similar to its use in the smart Assistant. The Coordinator is assembled using a BDI (Belief, Desire, Intention) agent structure in which both dialogue address and coordination of the task assistants are encoded in the agent's plans. The act of the coordinator is further indistinguishable in Wobckeetal. (2005), it is presented in single point of contact for the user to communicate with the SPA, to preserve the dialogue context (both information about the physical context

of the user and the dialogue history), to assign tasks to the e-mail and calendar assistants to fulfill the user task, and to notify the user of any important events, and to learn the user's orientation for interaction on particular device types. The current version of the SPA uses Dragon NaturallySpeaking in prescription mode for speech recognition, and Lernout and Hauspie TTS for address synthesis. The User Interaction Agent uses the ProBot scripting language of Sammut (2001) for computing adumbrate syntactic analysis of the speech input. Referable the modularity of the architecture, it is straightforward to alternate both the speech processor and fond parser by other equivalent systems.

Dialogue Management and Coordination:-

A BDI agent architecture founded on the PRS system is enforce in JACK, has been employed for the development of the SPA's Coordinator agent. The speech model is encoded in the plans of the agent, as described in Nguyen and Wobcke (2005). There is a separation Between domain free dialogue plans, handling discourse-level aim such as recognizing the user's intention, and domain-based plans, handling domain-level dialogue aspects and task delegacy to the back-end assistants. generic is a discourage-level plans that's are use for domain-specific knowledge. The modularity of this access enables the reuse of such discourse-level plans in the overall structure of our agent-based speech model, in which the Coordinator's plans are around arranged into four groups according to their purpose: semantic analysis, pragmatic parsing, task processing and response and clarification generation. Each group itself has many plans. The system have around 40 plans, including 20 discourse-level plans and six domain-specific plans for each task domain. It's main point is that dialogue processing is performed automatically as the result of the BDI interpreter analects and executing plans according to the current context. The Coordinator advocated the dialogue models; contain the conversational context and other domain-specific knowledge

A sits internal belief is given below:

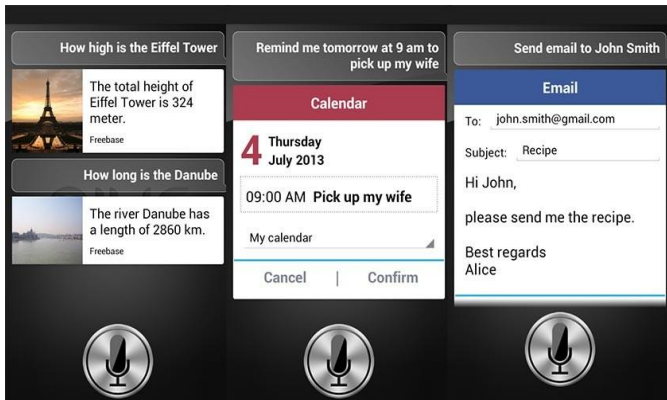
- Discourse History: for exerting the conversational context such as notification about the past and present dialogue states.
- Salient lists for maintaining an era of objects which have been declared previously in the communication, i.e. the objects that are in the focus of advertence.
- Area Specific Knowledge: includes area-specific vocabulary and notification of the tasks that are supported, used in rendering the user's requests.

• Exploiter Model: for maintaining notification about the user present device, preferred modality of converse, physical context, predilection, etc.

as shown in Nguyen and Wobcke (2006), learning can be incorporated into the plan selection process of the suitable plan amongst those applicative, enabling the SPA to tailor its responses according to the conversational circumstance and the user’s physical context, device and preferences.

PERSONAL ASSISTANT APPS FOR ANDROID:-

AIVC:-AIVC (Alice) is a pretty standard virtual assistant with an above modal track record. It includes the ability to ask for simple things such as starting many apps, the weather, time, date, reminders, and simple problems of mathematics. You can also ask about fun facts about states, stocks, and many more. Of course, it also comprises of the basics like calling, sending SMS, navigation, alarms. It is neither complex and nor as smooth as Google. But now it is not a bad option to just need something simple.



CORTANA:-It is true that Cortana still needs some work but it has very much strength to leave off of a list like this. Microsoft’s answer to Siri has a ton of things that it can do and it’s structured into Windows 10 for near-unlined cross-platform support. Among it has many features include the ability to call people, SMS and email, track packages, tell jokes, take notes, add stuff to your calendar, and more. Again, it is a little harsh approximately the edges right now, but Cortana is still better than most and it’ll only get better over the time.



DRAGON MOBILE ASSISTANT:-DMA (Dragon Mobile Assistant) was released by Nuance conversation, iconic Swipe keyboard is released by the same company. It comes with the basic features so you can expect pretty standard functionality. This one contains something called Attentive Mode which allows it to be activated even when the screen is off and bolted. That makes Dragon Mobile one of the few that offer this activity. You can also choose between several voices and even name your assistant what you want.

GOOGLE NOW:-Google Now is bonny much the accepted champion of smart assistant apps on Android. It comes with a metrical ton of analogue which includes the basics, more advanced airless like anticipating you activated it anywhere, Google Now on Tap, and a lot more. It’s not enough that this app is solid as a brittle wall but it’s also updated on an almost constant basis by Google which seems to only add to its ballast and range of analogue. If your device has Google Play accommodate, you probably predetermined have this installed that’s means you just have to turn on it. You can also get Google Now Launcher which puts Google Now at the forefront of your device interactions.



HOUND:-Hound beta is another one of the upcoming personal assistant apps alongside Cortana. That’s things are done by SoundHound and it’s actually pretty decent. The basics are all covered here and includes some advanced airless admire a mortgage calculator, integrated Expedia abide for hotel booking, and the SoundHound Now which opens a sing music search. You can even play interactive games like Hangman. It is only for United States, but this is out of beta and ready for public consumption.



ADVANCE PERSONAL ASSISTANT:-Watson is a type of question answering computing system that IBM is able to apply advanced simple language processing, tiding reprocessing, cognition delegacy, automated reasoning, and machine learning technologies to the field of open domain answering the questions. The main difference between QA technology and document search is that document search undertakes a keyword query and results in a list of documents, ranked according to the relevance of the query (often based on popularity and page ranking), whereas, QA technology takes a question asked or raised in natural language, and tries to comprehend it in a deeper way, and gives a precise answer of the raised question. According to IBM, "more than hundred different technologies are used for analyzing natural languages, identification of sources, finding and generating hypotheses, finding evidences, and many more."



SOFTWARE:-

IBM's DeepQA software and the Apache UIMA (Unstructured tidings Management Architecture) frameworks used by Watson. The system was written in different programming languages, such as Java, Prolog, and C++ and it is runs on the SUSE Linux Enterprise server 11 operating system using Apache had OOP architecture is allow distributed computing.

DATA:-The sources of proclamation for Watson enclose encyclopedias, dictionaries, thesauri, newswire apprentice, and literary works. Watson also used databases, taxonomies, and ontologies. Specifically, DBPedia, WordNet, and Yago were used. Watson was provided with many documents by the IBM team including dictionaries, encyclopedias, and much other reference material that it could use to build its knowledge.

OPERATION:

Watson parses questions into alter keywords and sentence fragments in order to find related phrases. Watson's main innovation was not in the art of a new algorithm for this operation but rather its power to rapidly accomplish hundreds of proven language analysis algorithms alternately to find the right answer. Once Watson has a small number of solutions, it is able to check abreast its database to ascertain whether the solution makes.

SCENARIO:-

There are showing a simple scenario in which the user tally e-mail and make an appointment using speech interaction over a PDA. Actions of the SPA comparable to points in the dialogue are scripted in italics.

User *Is there any new message from John?*

SPA *Yes you have two new messages from John Lloyd.*

User *Show me the one about slides please.*

SPA *shows correct message from John Lloyd.*

User *I want to see him at 5pm tomorrow about the slides.*

SPA *Do you want to fix that appointment to calendar?*

User *Yes, fix it to the Research category.*

SPA *Where are you going to meet him?*

User *My Company.*

SPA *Meeting has been created.*

Displays calendar showing new appointment.

CONCLUSION:-

The Smart Personal Assistant provide natural language interaction tailored to the user's device, and coordination of a range of specialist job assistants. The architecture is a BDI architecture it is used for coordination and dialogue actions, and communication between agents.

The agent-based approach provides a high degree of modularity, making the domain-independent aspects of the speech model reusable across applications. And this approach also makes it possible to incorporate learning into the system so that the user's choice for interactive can be acquired automatically.

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