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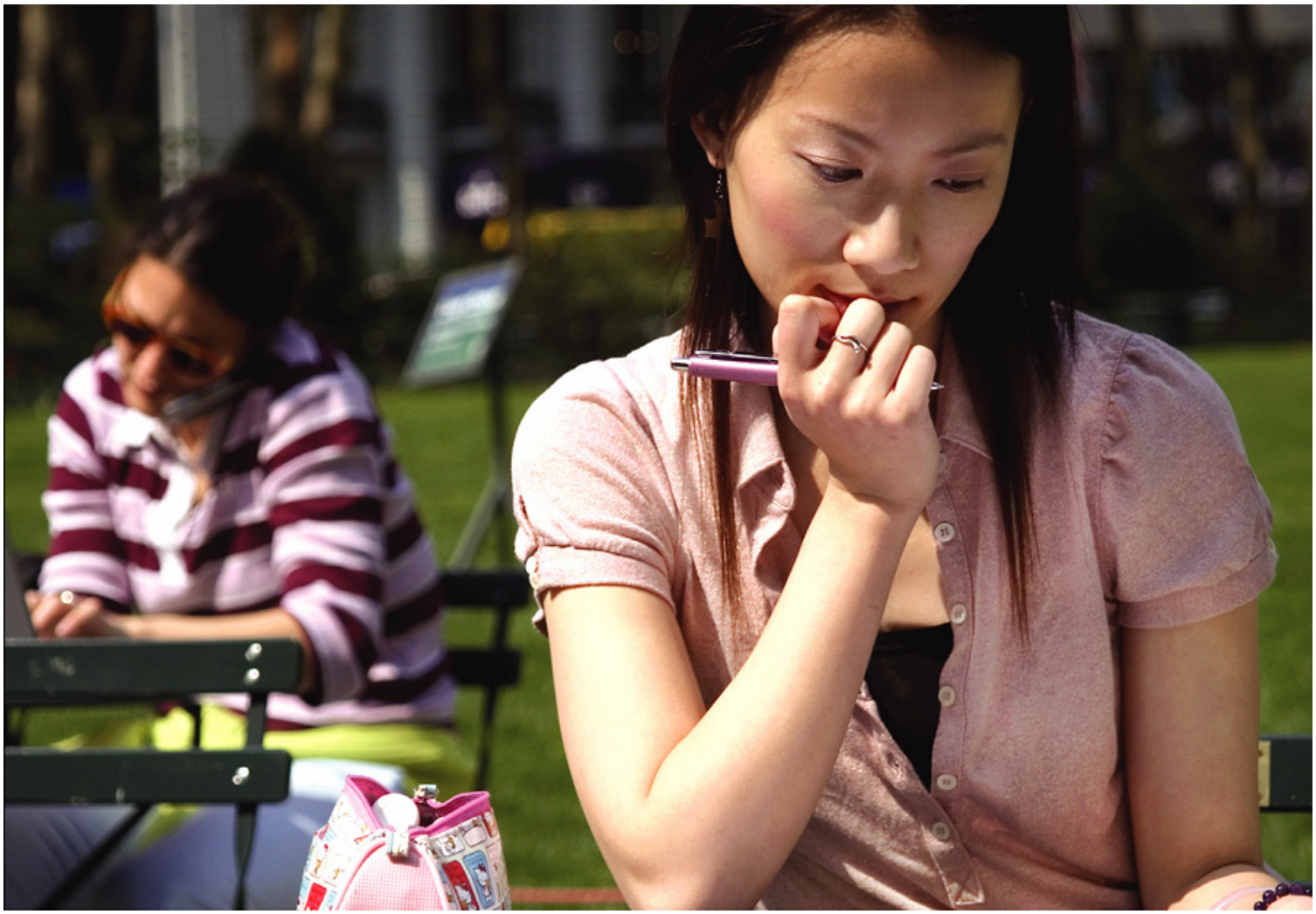
Basic Academic Writing Skills



To create a cheaper and more efficient prison, Jeremy Bentham invented the Panopticon. Jeremy Bentham was a philosopher in the late 18th century. The plans his brother Samuel designed for a military school in Paris inspired his idea for the Panopticon. The prisoners cells were to be aligned in a circle with a watchtower in the centre. The tower was to be constructed in such a way, that the prisoners could not know, if a warden was watching them. Through instilling the feeling of being watched, Bentham hoped the prisoners would act as if they were, even if they were not.

Michel Foucault invoked the Panopticon in his essay 'Discipline and Punish'. Even though the Panopticon was never built by Bentham, his idea was used by Foucault as a metaphor for modern societies. For Foucault, the progression from torturing criminals to imprisoning them was a change in ideology of the modern western state. The human body gradually became regarded as a machine and the individual human was to be disciplined into 'docile bodies'. Or as somebody would coin it today: The humans were to be disciplined into being robots. Foucault states that the disciplinary institutions main purpose was to make their subjects internalise the desired behaviour. Additionally, the institutions were also used to observe their subjects in order to enforce the discipline. For Foucault, the Panopticon was the perfect embodiment of such a disciplinary institution as it created the feeling of a constant observation.

Introduction

Computers have a long journey behind them. From being room-sized, they now have the form of handheld devices. Because of those developments, computers conquered any imaginable area of live. And pace with which computers still continue to be developed is amazing. Or to use the words of the co-founder of Intel. The processing power of computers is doubled approximately every two years [1]. At the same time not only hardware, but also software becomes increasingly sophisticated.

This essay discusses a new software type. It has been created recently to make for a better human-computer interaction: Intelligent Assistants.

What is an Intelligent Assistant?

Intelligent Assistants are particular programs that try to live up to the promise of their name: They aim to help their users to solve problems. They often analyse user behaviour and try to recognize patterns to assist the user, for example by automatically doing the bulk of the repetitive work. Intelligent Assistants are used in many different contexts like planning routes or agendas, writing different kinds of text or browsing the internet.

One infamous example was the Microsoft Office Agent “Clippy”, the animated paper clip that always had to pop up. But of course “Clippy” only illustrates one side of the coin. Siri (http://siri.com/) is an example for an assistant who uses natural language recognition to solve most of the tasks for which smartphones offer an elegant solution.

Daily Cooking

Before it is possible to decide, if Intelligent Assistants should be used to help with cooking, the process of creating a meal has to be analysed. Since the field of cooking is familiar to most people, a short overview should suffice to determine what an intelligent cooking assistant has to be capable of.

Tasks

The first thing fledgling cooks learn is that the most important part of cooking is the "mise en place". Putting all the ingredients in place is the third step to a meal. At the beginning one has to choose what recipe to cook and then the missing ingredients have to be acquired. As many cooking recipes do not need your attention all the time, it is advantageous to manage the time to carry out the cooking efficiently. In that case it is good to set a reminder, or a burned meal might result. Cooking therefore consists of four phases: planning, preparation, execution and a clean-up phase.

Requirements

Now that the tasks of cooking have been outlined, the requirements for an intelligent cooking assistant can be engineered.

The assistant should already help with the planning phase: Here it could help to find recipes either made with the ingredients one already has in possession. It could also use other criteria like vegetarian or total cost of the ingredients to plan the cooking. It could also help plan the meals over the course of a period of time (e.g. a week) to compose a grocery list with everything necessary for the recipe. With the cooperation of big stores it would also be possible to compare the different bargains they offer to select where to

go on the shopping trip.

In the execution phase it could interact with the cook through natural speech to repeat the details of the recipe and to remind, when the meal is finished. Alternatively it could even play multimedia content linked to a recipe. It is possible to imagine a virtual Jamie Oliver. He would get told what one would like to cook and would proceed to show a short video for every cooking step.

In the clean-up phase the assistant would enable you to rate and share the recipe with your friends, add comments or even make some adjustments. And it could also help with the accounting as it could provide lists of the ingredients that were consumed.

Intelligent Assistants for Cooking

An intelligent cooking assistant would probably provide the most value in the planning phase and the accounting as this is where the calculation power of a computer really shines. Additionally it could also deliver some help in the clean-up phase where it can make use of the internet to connect social information to the recipes. It is possible to provide assistance during the execution phase. However there are already many tools that help during this phase, therefore it is probably not necessary to focus on providing assistance here.

Existing Solutions

Since cooking is something that every human comes into contact with, it would not be surprising that there are many tools that try to assist with the cooking. It is not necessary to reinvent the wheel, therefore existing solutions also have to be analysed.

The first assistant one could come across would probably be SousChef (http://acaciatreesoftware.com/). It is available on Mac computers and the iPad. Unfortunately the market share of apple is under 10% [2], and that makes a lot of people unable to use this software. It also emphasises the execution phase. As it has been explained earlier, assisting there does not play out the strengths of computers.

Another example is the IChef, an intelligent assistant developed at Northwestern University. It also focuses on the execution phase through user support with voice interaction, i.e. it is reading the recipes for the user and reacts to voice input [3].

We also have ColibriCook, who uses “Case-Based-Reasoning” to help choose a cooking recipe [4]. That means, it approaches the planning phase of the cooking process, but it does not support the user in the other phases of cooking.

The researchers at Kyoto University have chosen a different approach as they only use their assistant to capture information about the cooking process [5]. Since basically their assistant is used for information retrieval, they pursue an approach to the clean-up phase.

Future Works

To sum up the examples of intelligent assistants for cooking: There are many different approaches, none of which makes use of the whole range of available tools and building blocks. On one hand this demonstrates that the issue of creating a cooking assistant is very complex and no small endeavour, but on the other side it also means that engineering such a software application is not just reinventing the wheel. Since humans have to eat, such an application does also have a practical purpose. The program "SousChef" has almost collected 200'000 different recipes and the great number of cooking blogs we can find on the internet support that statement. Therefore I propose that the pursuit of creating an Intelligent Assistant dedicated to help with the daily cooking is worthwhile.

Bibliography

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Abstract

Scott Thornbury argues that the best way to learn a new language and its grammar is by concentrating on the top 200 words. Those high frequency words are used in any text. Most importantly, they are used in the grammatical patterns of the language. Therefore through studying the words and their application, the grammatical rules are automatically learned as well.

The greatest drawback of this method is that those words seem so very insignificant. Without any additional "luxury" vocabulary no great text about a specific topic can be written. This means that the attention of the learner has to be directed towards the functional words of the language.

But if the impact of those words can be demonstrated, any given text can serve as an example to learn the patterns surrounding them. By training the usage of those patterns, the students learn the base vocabulary and the grammar of the language at the same time.

To create a cheaper and more efficient prison, Jeremy Bentham invented the Panopticon. Jeremy Bentham was a philosopher in the late 18th century. The plans his Brother Samuel designed for a military school in Paris inspired his idea for the Panopticon: The prisoners cells would be aligned in a circle with a watchtower in the centre. The tower was to be constructed in a way that the prisoners could not see, if a warden was watching them or not. Through instilling the feeling of being watched, Bentham wished for the prisoners to act as if they were, even if they were not.

Michel Foucault invoked the Panopticon in his essay 'Discipline and Punish'. Even though the Panopticon was never built by Bentham, his idea was used by Foucault as a metaphor for modern societies. For Foucault, the switch from torturing criminals to imprisoning them was a change in ideology of the modern western state. The human body gradually became regarded as a machine and the individual human had to be disciplined into docile bodies. Foucault states that the disciplinary institutions had to make the bodies internalize their discipline as well as constantly observe them. For Foucault, the Panopticon was the perfect embodiment of such a disciplinary institution as it provided the feeling of a constant observation.

Outline

How can intelligent assistants help with tha planning and execution of the daily cooking?

Introduction

- What is an IA?
- What types of IA are there, and which of those are helpful?

Main Part I - Daily Cooking - Sketch the Problem

- Needs
- Tasks

Main Part II - IA for Cooking

- Are there already solutions for similar Problems? Can they be applied
- How to create an IA for cooking
  - > Database
  - > User Interaction
  - > Development
  - > Suggestions

Introduction

Computers as well as its smaller brothers and sisters, handheld devices like smartphones have had a great impact on the daily life. And that's not all: The pace with which computers develop is amazing. Or as the co-founder of Intel put it: The processing power of computers is doubled approximately every two years [1]. At the same time not only hardware, but also software gets increasingly sophisticated. This essay discusses one specific kind of software, which has been researched and developed recently to create a more natural human-computer interaction: Intelligent Assistants.

What is an Intelligent Assistant?

Intelligent Assistants are a particular software programs that try to live up to the promise of their name: They should help their users to solve problems and tasks easier and faster. They analyse user behaviour and try to recognize patterns and help the user with the task, for example by reducing the amount of repetitive work done. Intelligent Assistants are used in many different contexts like planning routes or agendas, writing different kinds of text, browsing the internet amongst others. One infamous example was the Microsoft Office Agent "Clippy", the animated paper clip that popped up and tried to be helpful. But of course "Clippy" only illustrates one side of the coin, whereas Siri (http://siri.com/) is an example for an assistant who uses natural language recognition to solve most tasks for which a smartphone is designated.

Daily Cooking

Before we have a look at the Intelligent Assistants for cooking, we should look at the tasks that are completed while cooking. Since probably everybody knows what cooking encompasses, I'll be a little sketchy and only deliver an overview to be able to determine what an intelligent cooking assistant has to be capable of.

Tasks

In school we learned, that the most important part of cooking is the "mise en place". Putting all the ingredients in place is the third step to a meal. At the beginning one has to choose what recipe to cook and then the missing ingredients have to be acquired. As many cooking recipes don't need your attention all the time, it's also advantageous to manage the time to carry out the cooking more efficiently. In that case it's probably better to set a reminder, or a burned meal might result. Cooking therefore consists of four phases: planning, preparation, execution and a clean-up phase.

Requirements

Now that the tasks of cooking have been outlined, the requirements for an intelligent cooking assistant can be engineered.

The assistant should already help with the planning phase: Here it could help to find recipes either made with the ingredients one already has in possession, or it could also use other criteria like vegetarian or total cost of the ingredients to plan the cooking. It could also help plan the meals over the course of a period of time (e.g. a week) to compose a grocery list with everything necessary for the recipe. With the cooperation of big stores it would also be possible to compare the different bargains they offer to select

where to go on the shopping trip.

In the execution phase it could interact with the cook through natural speech to repeat the details of the recipe and to remind, when the meal is finished. Alternatively it could even play multimedia content linked to a recipe. What I'd have in mind is a sort of a virtual Jamie Oliver, who assists you when you are actually cooking the same meal as he is, and not at a random time in the evening when you'd rather eat something different.

In the clean-up phase the assistant would enable you to rate and share the recipe with your friends, add comments or even make some adjustments. And it could also help with the accounting as it could provide lists of the ingredients that were consumed.

Intelligent Assistants for Cooking

An intelligent cooking assistant would probably provide the most value in the planning phase and the accounting as this is where the computer's calculation power can shine. Additionally it could also deliver some help in the clean-up phase where it can make use of the internet to connect social information to the recipes. It is possible to provide assistance during the execution phase, but I believe that there are already enough tools that help during that phase and that users are already accustomed to, therefore it's probably best to not emphasize that phase.

Existing Solutions

Since cooking is something that every human comes into contact with, it's not surprising that there are many tools that try to assist with the cooking. I would not propose to reinvent the wheel, that's why existing solutions also have to be analysed before coming to a conclusion.

The first assistant one would come across, would probably be SousChef (http://acaciatreesoftware.com/). It is available on Mac computers and the iPad. Unfortunately the market share of apple is under 10% [2], and that makes a lot of people unable to use that software. It also lays the emphasis of its services on the execution phase, which I personally would not see as the most important one.

Another example is the IChef, an intelligent assistant developed at Northwestern University. It also focuses on the execution phase through user support with voice interaction, i.e. it's reading the recipes for the user and reacts to the user's voice input [3].

We also have ColibriCook, who uses "Case-Based-Reasoning" to help choose a cooking recipe [4]. That means, it approaches the planning phase of the cooking process, but it doesn't support the user in the other phases of cooking.

The researchers at Kyoto University have chosen a different approach as they only use their assistant to capture information about the cooking process [5]. Since their assistant is ultimately used for information retrieval, they pursue an approach to the clean-up phase.

Future Works

To sum up the examples of intelligent assistants for cooking, it's obvious that we have

many different approaches, none of which makes use of the whole range of available tools and building blocks. On one hand this demonstrates that the issue of creating a cooking assistant is very complex and no small endeavour, but on the other side it also means that engineering such a software application is not just reinventing the wheel. Since humans have to eat, it's also a fact, that such an application could have a place in society. The program "SousChef" has almost collected 200'000 different recipes and the great number of cooking blogs we can find on the internet support that statement. Therefore I propose that the pursuit of creating an intelligent assistant dedicated to assist with the daily cooking is a fruitful task.

Bibliography

1. Moore, Gordon E. (1965). "Cramming more components onto integrated circuits" (PDF). Electronics Magazine. pp. 4. Retrieved 2006-11-11.
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