

# It's like software understands, um, language

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(PhysOrg.com) -- EU researchers have taken speech recognition to a whole new level by creating software that can understand spontaneous language. It will, like, make human-machine interaction, um, work a lot more, er, smoothly.

Automated speech recognition has revolutionised customer relations for banks, allowing them to respond quickly and with less staff to more low-level queries. It has helped to enable online banking and the development of more advanced private and public services because machines can handle routine matters, leaving people to take care of more serious issues.

But this technology has its limits. The most common, very basic, voice system asks a series of questions or offers a series of options, slowly and fitfully narrowing down your problem or supplying the solution. It would

be nice to just tell the service what you want.

Soon, you can, thanks to the work of the Luna project, a European-wide effort to dramatically advance the power and intelligence of speech recognition. The team is moving the system from utterances - like ‘yes’, ‘no’, or ‘account’ - to spontaneous speech, such as ‘I want to get the balance on my current account.’

## **Um, ah, and er...**

This high level of speech recognition is called spoken language understanding (SLU), where software understands the meaning of what you are saying and can filter out the irrelevant verbiage, like ‘um’, and ‘ah’ and ‘er’.

Luna’s work in several languages is even more impressive. It has developed the most advanced SLU for both Polish and Italian, languages that had no similar systems before.

It is a big job. “We had to spend a lot of time initially recording spontaneous conversations between people and between people and machines,” explains Silvia Mosso, coordinator of the EU-funded Luna.

This is called the corpora, the collection of words and phrases that gives the software its basic language. Then, researchers have to annotate the terms in a way that machines can understand, and finally they apply statistical language models.

## **I have a problem ...**

“You can say things like ‘I have a problem with my printer’ and it will help you go through the options,” says Mosso.

The result is a system that can interact with people in a much more natural and fluid way. It will mean faster and more productive interactions with service centres, whether its getting travel information from public transport, dealing with an IT problem or tourist information - three of the areas where Luna applied its research.

“The advantage with these areas is that you can apply our work to any kind of help centre. But if you want to apply it to different areas, then you need to do the initial collection of the conversations, the corpora, again,” Mosso reveals.

## **Fundamental mechanics**

Their scientific work is perhaps even more important. It looked at the fundamental mechanics of language and the development of SLU, work that will have potential applications in robotics and other areas.

Luna presented its work at ICT 2008, Europe’s largest conference and exhibition for European Information and Communication Technology research, and its demonstration was well received. “We had an avatar presenting the project and talking to people about it, and it was very popular.”

The work of the project is guaranteed practical use, with industrial partners like France Telecom, Loquendo and CSI Piemonte planning to incorporate the results into the services run within public administrations.

And the project has still several months left before it ends. “We have released the baseline systems in three languages and we will be refining them over the last months of the project.”

And then people can look forward to telephone systems with a little

more understanding.

The Luna project received funding from the ICT strand of the Sixth Framework Programme for research.

*This is the first of a two-part feature on Luna.*

Provided by [ICT Results](#)

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