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# The Story of Vojtěch with Hearing Impairment

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## Vojtěch Srdečný: The Future Belongs to Hearing Aids

He loves gadgets, enjoys solving problems, and believes that one day everyone will wear hearing aids. Vojtěch Srdečný has needed them since childhood—he was born with a hearing impairment. That's why, as a student at the Faculty of Mathematics and Physics at Charles University, he focused on improving systems that convert spoken language into written form.

"I try to live up to my surname," says the shy but charming young man with a smile at the start of our meeting. Srdečný means "kind" or "cordial" in Czech. True, at first he seemed a bit reserved—but who wouldn't be when a photographer forces them into awkward poses and expressions, or insists on shooting in public toilets or against corrugated metal? Once everything settled, Vojta opened up. He was born with a 95% hearing loss in both ears. Fortunately, the disability was detected early, so he has used hearing aids since a very young age. Thanks to them—and especially to regular speech exercises with his parents—he had no major difficulties integrating into social groups, whether in kindergarten, elementary school, or high school. As for academic accommodations, he only needed slight adjustments in grammar school: sitting in the front row, usually an unpopular spot. Today, he doesn't dwell on his disability; he says he has accepted it and lives with it: "I don't stress about it—I can't change it," he comments optimistically.



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According to this student from the Faculty of Mathematics and Physics, modern hearing aids offer many benefits: "They're controlled by microprocessors, which allow them to connect to other audio devices. Without disturbing anyone, I can watch videos or make phone calls from my mobile," he explains.

He even shares his vision of the future: "I imagine that in 20 or 30 years, we'll all be using hearing aids. There will be wireless sound transmission from phones, noise reduction, voice amplification, and many more features. Time will tell if I'm right."

Currently, Vojtěch is in his first year of a master's program in Informatics and Software Systems at Charles University. He jokingly calls himself a "mild dilettante"—though he's not formally studying computational linguistics, that's where his interests lie. During his bachelor's degree, he used the services of the [Carolina Centre](#) (which supports students with special needs at Charles University) to get lecture transcripts in written form. Eventually, he launched his own initiative: automated captioning of recorded lectures.



How does it work? Imagine taking a film or audio recording, inputting it into a computer, and within moments it generates a transcript in text form. Thanks to Vojta, subtitles from Newton Technologies are now available for many recorded lectures—and they're not just used by students with hearing impairments. There is a catch, though: lectures are often filled with thousands of abbreviations, formulas, mathematical terms, and other “tricky” elements. Standard systems don't recognize them; they're trained only on everyday Czech. As a result, transcription errors are common. That's why Vojta dedicated his bachelor's thesis to exploring how to teach speech recognition and machine translation systems to “understand” these specialized expressions. “In practice, this means feeding the systems with massive amounts of data. For example, news articles filled with commonly used terms and phrases. But that vocabulary isn't enough for specialized lectures. So I explored how to teach the systems new, domain-specific terms,” he explains, offering a “humanized” summary of his thesis.

Vojta continues working on this topic through the [ELITR project](#) (European Live Translator), which focuses mainly on speech recognition and machine translation into multiple languages. He plans to keep contributing to the project during his master's studies.

Like many other students with hearing impairments, Vojta appreciated online learning during the pandemic. “I didn't have to sit in a crowded lecture hall and try to focus on the lecturer. Lip-reading under normal conditions isn't easy—intense concentration tires you out very quickly. And trying to understand everything on top of that! If I got lost during the lecture, I might as well go home,” he says.



But the online format allowed him to access recorded lectures anytime. If he didn't understand something, he could simply replay it—over and over, as needed. You'll likely never see Vojta without his laptop—not even on vacation. Which makes sense, since programming is his passion. He especially enjoys solving real-world problems. That's why he spends much of his free time debugging and improving the aforementioned speech-to-text system. When he needs to relax, instead of heading into nature, he retreats to his “gamer's den,” where he enjoys playing board and card games. “You don't know [Magic: The Gathering](#) ?” he asks in surprise. He was also helping solve real-world problems even before the pandemic. As part of the [Food Not Bombs](#) (FNB) initiative, he and other volunteers distributed unsellable supermarket food to people in need. “Unfortunately, current pandemic restrictions no longer allow us to continue... It's too difficult to meet all the hygiene requirements,” Vojta comments.

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