

# Meet Robotica, making all written and spoken words available in sign language

As part of our quick fire questions series – or QFQs – we spoke to Michael Davey, Technology & Operations Director at Robotica about using technology to solve the global shortage of sign language translators and interpreters in a content-hungry digital world.

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People that are Hard-of-Hearing or Deaf are excluded from accessing information and entertainment.

That's because there's a global shortage of sign language translators and interpreters. They work really hard to improve lives in hospitals and courtrooms, at job interviews, helping people buy a new home. It's a tough job and takes years to learn. Even if there were a hundred times as many translators, there still wouldn't be near enough to meet the demands of a content-hungry digital world. Last year, the BBC released 28,000 hours of new content. Every single hour, tens of thousands of new page pages are crafted, 30,000 hours of new videos are uploaded to YouTube.

The only way that sign language users can gain equality of access to information and entertainment is with machine translation.

Tell me about the business – what it is, what it aims to achieve, who you work with, how you reach customers and so on?

Robotica products and services automatically translates communications into visual languages, presented by virtual interpreters.

<https://embed.api.video/vod/vi2DXH1aGaJomQeDkFS5j3U>

Can you tell our readers about your engagement with Empact Ventures?

Empact Ventures acts as a *super-connector and networking support* – connecting us with potential partners, clients and funders both in the private and public sector. Such services are so important in supporting startups and scaleups like us to be successful and grow.

Tell us about the working culture at

# Robotica Machine Learning

We're a world-leading multi-disciplinary team of neuroscientists, media, broadcast specialists, software engineers, AI and machine learning specialists, linguists and deaf people. Our solution combines motion capture, natural language video and audio processing and 3d games engine technologies. We are based in Norwich in the heart of Norfolk, UK.

## How are you funded?

We're entirely self-funded by our founders and early sales revenue to date. Our broadcast and media customers include Sky and BT (British Telecommunications plc). We are currently undertaking our first external raise (£2M).

## What has been your biggest challenge so far and how have you overcome this?

Being first to market brings unique technical challenges. We've had to build a lot of our tools and capabilities from scratch or from first principles – there simply wasn't a body of prior work on which to lean on. For instance, there wasn't low-cost, millimetre accurate motion capture kit that did a good job of whole body, facial, lip, tongue and finger motion capture so we have create bespoke combination of three motion capture hardware solutions plus our own software in order to get the fidelity we require. Similarly, visual languages have unique features that don't exist in written and spoken languages, so you can't simply extend an existing translation tool to be able to translate into a signed language. You have to start again from first principles. We have also developed our machine learning approach from first principles – the way it works is radically different to the established industry approach to machine learning.

## What's in store for the future?

We unveiled our 7th generation avatar technology at the International Broadcasting Convention (IBC) last September. Our avatars can sign in British Sign Language, Sign Supported English and a number of other signing systems including Cued Speech, Makaton and Sign Along. Our avatars are now busy learning Italian and American sign language and based on string interest and feedback from IBC, may soon start learning German (DGS), Maltese (LSM) and several other sign languages. There are over 300 sign languages recognised around the world and less than 1% of content is translated into any sign

language today, so there is plenty to keep us busy!

<https://embed.api.video/vod/vi2j8EkvSkwDWxFDaJ6Yg5yh>

## What one piece of advice would you give other founders or future founders?

Being a founder is like being on the wildest rollercoaster. The most unexpected things come at you all the time, some good, some bad. The highs are so much higher, and the lows are so much lower than just doing your average job or being a regular professional. It is highly rewarding but it is essential that you have the support of your family, friends and a first class support network before you start.

## And finally, a more personal question! What's your daily routine and the rules you're living by at the moment?

Every day is different and that's one of the things I love. Following on from the answer to the previous question, one of the rules I'm trying to live by at the moment is not to worry too much about the what if's (the spanner in the works is much more likely to come from something unknowable) and to focus on our core mission, building momentum and delivering on our commitments.

Michael Davey is Technology & Operations Director and Partner at *Robotica*.

Robotica is part of the Super Connect for Good 2022 Competition powered by global super connectors, Empact Ventures, and for more information visit *<https://empact.ventures>*.

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