

EXECUTIVE SUMMARY:

HearMe is a product designed for customizing production and work processes for people with hearing impairments. It is a digital device - a smart badge with a built-in camera, and a smartphone application with integrated AI which is able to recognize sign language and translate it. The customer will be able to hear a response right from the phone.



Our application is based on MediaPipe technology. It is a Google library for real-time hand tracking and motion analysis. It is widely used both for gesture recognition and sign language interpretation based on computer vision and neural networks. The user needs to put the badge right at them, consequently it will automatically read it and give a response through the dynamics of the phone with an additional text on it. As a result, it will enable the employees with communicative abilities both between them and the customers.

Inside the same app, the waiter can mark which dishes the customer ordered. Then the order appears on the customer's screen in real-time, showing when the order is received, being prepared, and ready.



And if the badge ever stops working, there is a manual backup page in the app, where the waiter can still sign in front of the camera, and the AI MediaPipe system will translate it into speech as usual.

THIS SOLUTION DIRECTLY ADDRESSES KEY CHALLENGES:

- Improves customer service by removing communication barriers.
- Helps integrate deaf staff into the team without additional strain.
- Avoids high interpreter costs (average \$69,000/year).
- Enhances the restaurant's public image as socially responsible and inclusive.

Implementation is simple: the badge connects to the waiter's phone; guests scan a QR code to view the menu, place orders, or speak directly into the device. The app translates speech into text for the waiter and signs into speech for the guest — all in real time.

COMPETITIVE ANALYSIS:

Our product is a solution for restaurant services where the application and badge are programmed specifically for the restaurant service interface. This eliminates delays when placing orders. Unlike universal products such as Microsoft Kinect (Azure Kinect) and ASUS Xtion Pro, which are not optimized for the needs of restaurants and require additional setup, our application operates reliably, quickly, and is ready to use immediately.

For guests, everything is as simple and convenient as possible: they do not need to use their personal devices or share personal information. The application is with the waiter, ensuring quick and clear communication. Microsoft Kinect requires a separate device, while ASUS Xtion Pro requires additional equipment and complex setup, significantly reducing their practicality in restaurant or retail service. Our product surpasses these solutions with its simplicity, accessibility, and readiness for use without any extra effort.

FINANCE AND BUDGET:

To support the idea of an inclusive workspace for your company, we introduce a cost-efficient, innovative, and scalable communication solution that uses AI-powered gesture recognition. This eliminates the need for ASL interpreters, which significantly reduces the company's costs. We've simplified development with trusted tools like MediaPipe for gesture recognition, reducing time and costs. This ensures that you get not only a high-performance product but also an affordable offer. Instead of paying \$54,000, a full setup costs only \$14,400.

Development Costs (One-Time)	
App Development	\$8 000,00 iOS/Android or web app to interpret gestures
AI Model Integration	\$5 000,00 Integrating existing sign recognition model (MediaPipe)
Backend System	\$700,00 Cloud/server setup to process video & output text/audio
Design/UI/UX	\$500,00 Accessibility-friendly interface
Branding/Visuals	\$200,00 Logo, pitch deck
Total	\$14 400,00

Figure 1. "HearMe" Development Costs

Over three years, our solution will enable 100 deaf employees to communicate in real time at a total cost of less than \$40,000. For example, this is significantly cheaper than hiring just two full-time sign language interpreters for one year. Not only does this approach significantly reduce costs, but it also offers a large-scale, technology-based alternative that provides continuous support across all departments, regardless of people's availability. This ensures that employees with disabilities can work autonomously, fully engaging in team tasks and instantly accessing the information they need, all while creating an inclusive workplace that is financially sustainable.

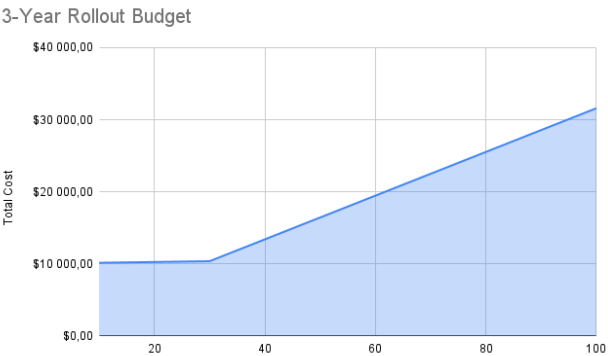


Figure 2. 3-Year Rollout Budget

Our base price per unit is \$266, which includes hardware components (camera, mount), software access, and integration. To ensure long-term support, upgrades, and potential expansion, we have included a small markup in the price, bringing the final price to \$296 per unit. This margin allows us to maintain an

affordable price while ensuring the quality of the product and its further development.

Pricing Proposal	
Component	Cost per unit
Camera	\$40,00
App	\$220,00
Camera Mount	\$6,00
Total	\$266,00
Selling Price	\$296,00

Figure 3. Pricing Proposal for HearMe

CONCLUSION:

HearMe is an effective, affordable, and inclusive alternative to hiring sign-language interpreters. It provides instant two-way communication, is easily scrabble, and significantly reduces costs, making the service comfortable for both deaf workers and customers.

It requires no setup for guests, is fully operated by staff, and integrates easily into existing service models, including QR code menus and order tracking systems.

Our system is cost-efficient, reducing the need for expensive interpretation services (saving up to \$69,000 per year), and fully inclusive, empowering deaf employees to independently communicate, take orders, and deliver excellent service.

By adopting HearMe, your restaurant isn't just improving accessibility — it's leading the way in modern, socially responsible hospitality, combining human empathy with cutting-edge technology to create a more equal and satisfying experience for all.

REFERENCES:

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