

Development of a microfactory using AI specialized in prosthetics and orthotics （Instalimb, Inc.）



City	Year of Establishment	Founder
Yokokawa, Sumida ward,Tokyo	2017	Yutaka Tokushima

Partner VC	Latest round of Fundraising	Valuation
JIC Venture Growth Investments Co., Ltd.	Series B	JPY 2,226 million

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○ Business Plan

By utilizing the company's self-developed combination of 3D CAD and AI technology, a 3D scanner creates data on the geometry of absent part, and a 3D printer creates the prosthetic leg, resulting in a significant cost reduction (selling price: approximately 40,000-50,000 yen) that is approximately one-tenth the cost of conventional products in terms of both equipment expense and product unit price, while maintaining the same or better quality than conventional products distributed in developed nations. Instalimb aims to achieve our goal of “eliminating the inability to stand, walk, or go outside, and to open up the world to new possibilities”. The company's specific goal is to achieve a world where “everyone who needs prosthetics has access to high-quality products” within the next 10 years.

○ Research Outline

In this research and development, we will solve following problems:
1) difficulty in preliminary diagnosis technology, and
2) difficulty in design,
which are the cardinal factors preventing the realization of prosthetic leg manufacturing using 3D printers based on our technology in countries and regions other than the Philippines and India, where our technology has already been deployed, by developing the following:
(1) Development of a scanning device capable of acquiring both surface and depth information (bone position, etc.) to eliminate the need for in-person professional consultation
(2) Development of a multi-layer prosthetic leg with different physical properties for different parts of the body that can fit to various patient conditions and improve the patient acceptance rate
(3) Development of an AI-based automatic prosthetic design algorithm that takes into account the depth information described in (1) and the multi-layer prosthetic leg described in (2), and
(4) Development of a microfactory that includes the above (1)-(3).

Business Area/Field	Research Period	Research Amount	International collaborative technology demonstration
Healthcare	PCA 2024～2025FY	JPY 493 million	—

As of May,2024