

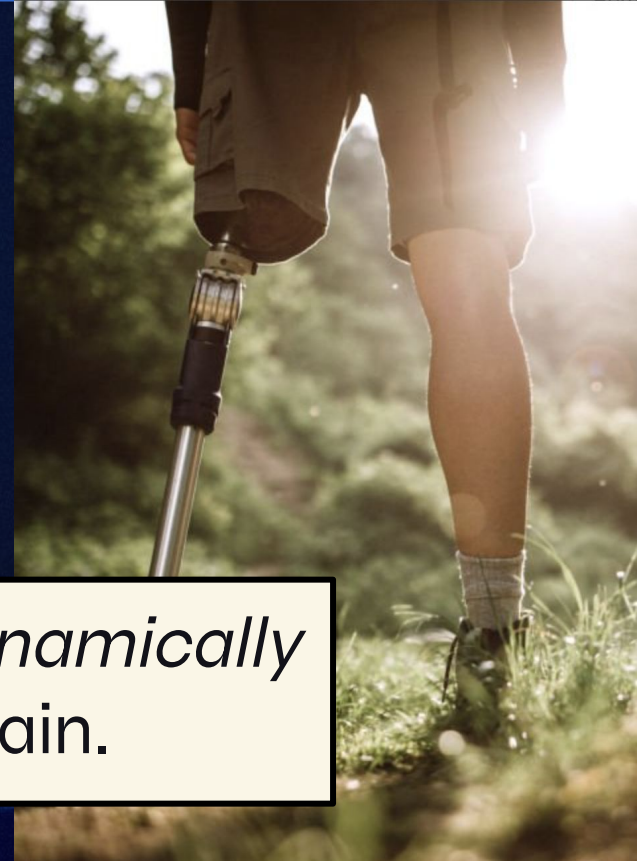


*An AI-driven
prosthetic foot that
dynamically adapts
to uneven terrain*

The Problem.

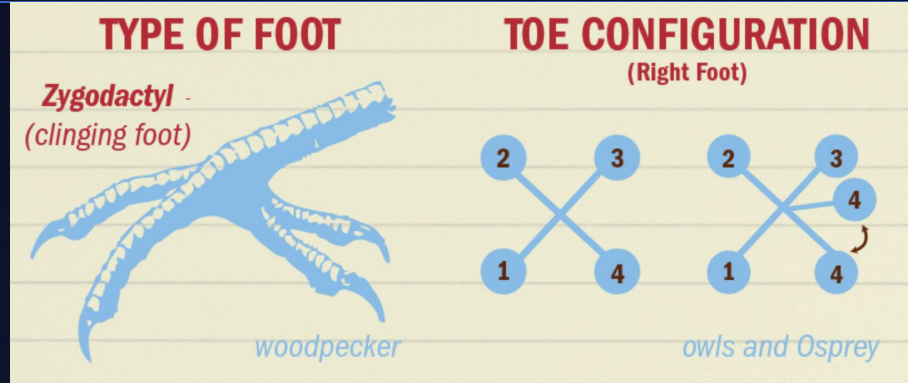
- Over **2 million** people in the U.S. live with **lower-limb amputations** (Rivera et al., 2024)
- **~60%** cite an inability to walk on natural surfaces as a **MAJOR** limitation (Chiu et al., 2021)

NEED: prosthetic that can *dynamically* adapt to changes in terrain.



Harnessing Nature's Genius

*TerraFlex is inspired by **zygodactyl feet**, two toes facing forward, and two backwards.*



Source: Wild Bird Store



E.g: Roadrunner zygodactyly provides it:

- **Enhanced grip**
- **Improved stability**
- **Better traction**



TerraFlex: Nature-Inspired Innovation

Unique Value Proposition:

TerraFlex is the **first AI-powered prosthetic foot** inspired by **bird biomechanics**, specifically zygodactyl feet, engineered for real-time terrain adaptation.

Key Features:

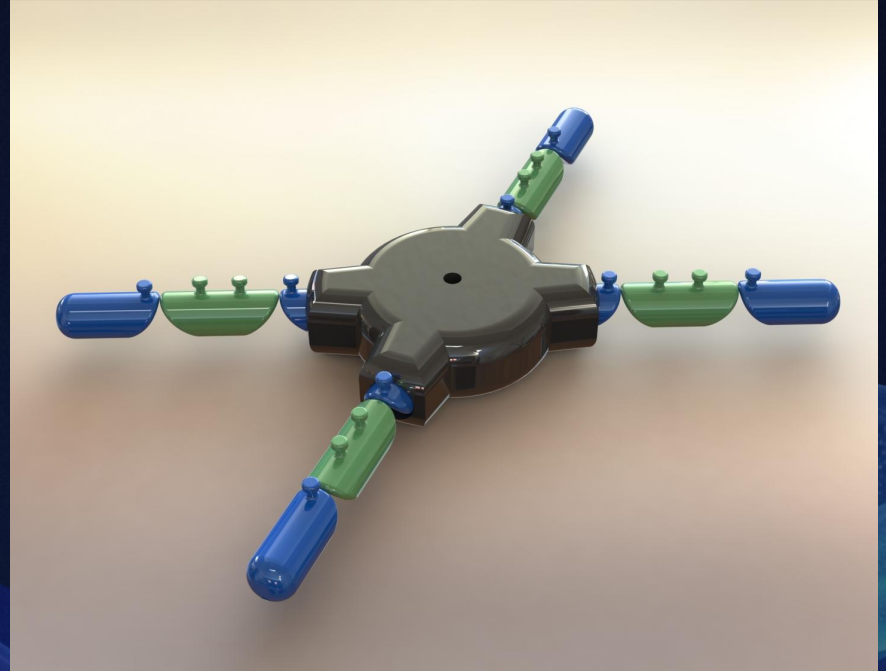
- **Biomimicry-based:** Mimics the natural terrain-gripping ability of zygodactyl feet seen in many bird species.
- **AI-driven mobility:** Smart sensors analyze ground conditions in real time, adjusting toe flexion/extension for optimal contact and stability.
- **Enhanced mobility:** Designed for outdoor, uneven, and variable terrains, going beyond flat-surface prosthetics.

TerraFlex: 1) Biomimicry Design

Biology:



Our CAD design:



TerraFlex: 2) AI Integration





Target Market

 **20M+ Lower-Limb Amputees Globally**

TAM: \$2B
SAM: \$600M

 **Our Beachhead Market:**

- Active transtibial amputees (ages 18–65) in terrain-heavy regions (e.g. rural U.S., India, sub-Saharan Africa)
- Focused on those underserved by current rigid or flat-surface prosthetics

 **Entry Points:**

- Rehab hospitals & prosthetics clinics needing performance-focused tech
- Veteran and military health systems (VA, MoD, humanitarian aid sectors)



Business Model/GTM

6 Months

Year 1-2

Year 3+

Individual Amputees
B2C Testing

*Individuals + Domestic
Hospital Partnerships*
**B2C + B2B2C
Model**

*International Hospital Partnerships +
Prosthetic NGOs*
Global Expansion

