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[Back to Home](#) >

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News

- [Mercury News](#)
- [Top of Wires](#)

Columnists

Research

Financial Markets

- [Public Markets](#)
- [Venture Capital](#)

Personal Technology

SV Life

- [People](#)
- [Valley News](#)
- [Hot Topics](#)
- [Careers](#)
- [Events](#)
- [Archives](#)
- [Contests](#)
- [Search](#)

Events

Archives

Contests

Search

Features

- [VC Survey](#)
- [Salary Survey](#)
- [SV 150](#)

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Hero strength made here

EXOSKELETON HELPS WEARER WITH HAULING

By Jon Fortt
Mercury News

It looks like a pair of spidery robot legs and a backpack, strapped to the body of the wearer.

Say hello to Berkeley Lower Extremities Exoskeleton, or BLEEX for short. Science-fiction fans will recognize the concept from movies like ``The Matrix Revolutions'' and ``Transformers: The Movie.'' Humans climb inside a machine suit and can then perform superhuman feats.

So far, the robotic legs, developed at the University of California-Berkeley, help the wearer to haul about 70 pounds for about three hours, according to Homayoon Kazerooni, director of Berkeley's Robotics and Human Engineering Laboratory. So someone wearing a BLEEX could shoulder a 100-pound backpack and feel like it weighed just 30 pounds. Kazerooni hopes that in a year, BLEEX will handle 120 pounds.

Likely BLEEX-wearers include soldiers, firefighters and disaster relief workers -- people who haul gear during life-threatening situations.

The project has been funded by Defense Advanced Research Projects Agency, DARPA -- the same federal agency that financed the early development of the Internet. DARPA also has funded similar research at Salt Lake City-based Sarcos and Oak Ridge National Laboratory in Tennessee. But Kazerooni's team at Berkeley has been more visible since it made a show of its breakthroughs at a DARPA tech symposium last week in Anaheim.

Kazerooni wants to miniaturize parts of BLEEX, boost its weight-bearing capability and extend its endurance.

``Right now my exoskeleton is not fast enough to go with me on reflexes,'' Kazerooni said. ``We can't run with this yet, we can't jump yet, just a regular walk.''

But Kazerooni and his team are working on it. They have built a contraption they call Pogomatic, which is like a Pogo stick that allows people to bounce without jumping. It could be the beginning of a BLEEX that can run.

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