

Linux Devices and OSL/OpenLeg

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- [Open-Source Computer Nonprofit Introduces New, More Powerful Model](#) [3]

The BeagleBoard.org Foundation, the Oakland Township-based open-source computer nonprofit, has announced the availability of BeagleBone AI, the newest, fastest, most powerful BeagleBone low cost computer yet.

Built on the foundation's open source Linux approach, BeagleBone AI fills the gap between small single board computers and more powerful industrial computers. Using the Texas Instruments Sitara AM5729 processor, developers have access to powerful machine learning capabilities with the ease of the BeagleBone Black header and mechanical compatibility.

- [USB Armory Mk II open source USB computer for security applications](#) [4]

Developers or enthusiasts building security applications may be interested in a tiny open source USB computer called the USB armory Mk II. Created by F-Secure Foundry the USB computer has been specifically designed with security applications in mind and is now available to back by the Crowd Supply website. The 'security-minded' USB-C computer runs Linux and features a 900 MHz ARM processor, 512 MB RAM, Bluetooth and USB-C connection. Watch the video below to learn more about the small form factor USB computer designed from the ground up with information security applications in mind.

The USB armory Mk II hardware is supported by standard software environments and requires very little customization. In fact, vanilla Linux kernels and standard distributions run

seamlessly on the tiny board. High Assurance Boot (HABv4). The HAB feature enables on-chip internal Boot ROM authentication of the initial bootloader (i.e., Secure Boot) with a digital signature, establishing the first trust anchor for code authentication.?

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[TechNexion XORE is a tiny NXP i.MX 8M Mini LGA System-on-Module](#) [5]

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[AI and open sourcing: a new frontier for prosthetic leg design](#) [6]

Open-source projects allow clinicians to piggyback off of each other's research and create the best artificial limbs possible. Scientists from the University of Michigan have now unveiled an artificially intelligent prosthetic leg that fellow researchers can access through open-sourcing, a development which has the potential to revolutionise the prosthetic leg industry.

[...]

Through this website, researchers are able to access the specific materials used to construct the OSL, alongside the vendors they can access these materials through. The leg has been designed using motor technology developed for the drone industry, with flat pancake-style motors inside which trade speed for torque. This allows the user to have more efficient control over their prosthetic and lets them walk more naturally.

Once the leg is constructed, researchers using the OSL can download the AI software, which tells the leg how to move. The resulting algorithmic data from different users of the OSL is also designed to be open-source. The common platform enables direct comparisons of different uses of the software, which researchers can then merge and build upon.

The full bionic leg, made according to the website's specifications, will cost each manufacturer \$28,500.

As well as being robust and fairly inexpensive ? the full bionic leg, made according to the website's specifications, will cost each manufacturer \$28,500 ? the system is designed to be straightforward and easy to manufacture. Videos online detail each step of the building process.

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[OpenLeg, a new open source project for building robot legs](#) [7]

Navigating multi-level environments, including stairs and unstructured environments such as a floor with debris or uneven terrain, is difficult for wheeled robots. Legged robots such as quadrupeds are able to excel in these environments. However, it's far easier to give robot a wheel than to give a robot leg or wings. How about doing so with an open-source leg?

This can be possible, thanks to the OpenLeg, a new open source project for building robot legs. The idea behind the project ? created by Joey Byrnes and the team at the University of Illinois ? is to create a robot leg that others can use to build four-legged robots that is compatible with the surrounding environment.

[Hardware OSS](#)

Source URL: <http://www.tuxmachines.org/node/128684>

Links:

[1] <http://www.tuxmachines.org/taxonomy/term/39>

[2] <http://www.tuxmachines.org/taxonomy/term/72>

[3] <https://mitechnews.com/new-products/open-source-computer-nonprofit-introduces-new-more-powerful-model/>

[4] <https://www.geeky-gadgets.com/usb-computer-26-09-2019/>

[5] <https://www.cnx-software.com/2019/09/29/technexion-xore-tiny-nxp-i-mx-8m-mini-lga-system-on-module/>

[6] <https://www.medicaldevice-network.com/features/open-source-ai-prosthetic-leg/>

[7] <https://www.inceptivemind.com/openleg-open-source-project-building-robot-legs/9271/>