Adafruit Industries

Adafruit Industries is an open-source hardware company based in New York City. It was founded by Limor Fried in 2005. The company designs, manufactures and sells a number of electronics products, electronics components, tools and accessories. It also produces a number of learning resources, including live and recorded videos related to electronics, technology, and programming.

Adafruit Industries

Industry	Open-source hardware
Founded	2005
Founder	Limor Fried
Headquarters	New York City (SoHo, Manhattan), New York, United States
Revenue	US$45 million (2016)[1]
Number of employees	105[1] (2016)
Website	adafruit.com (http://adafruit.com)

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History

Limor Fried, then a student at Massachusetts Institute of Technology, began selling electronic kits on her website from her own designs in 2005.[2][3] She later moved to New York City to found Adafruit Industries.[4]

In 2010, Adafruit offered a US$1,000 (equivalent to $1,172 in 2019) reward for whoever could hack Microsoft's Kinect to make its motion sensing capabilities available for use for other projects. This reward was increased to $2,000 and then $3,000 following Microsoft's concerns about tampering.[5][6][7]

The company had $22 million in revenue in 2013 and $33 million in 2014.[4]

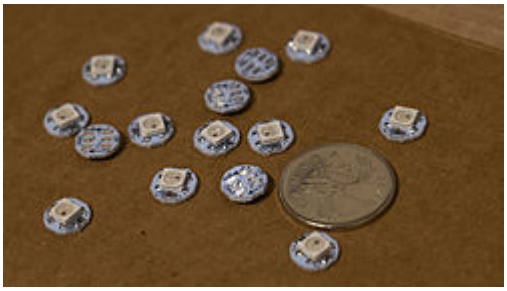
Company name

The name Adafruit comes from Fried's online moniker "Ladyada", itself a homage to computer science pioneer Ada Lovelace. The company's goal is to get more people involved in technology, science and engineering.[8]

Products

In addition to distributing third party components and boards such as the Raspberry Pi, Adafruit develops and sells its own development boards for educational and hobbyist purposes. In 2016, the company released the Circuit Playground, a board with an Atmel ATmega32u4 microcontroller[9] and a variety of sensors, followed in 2017 by the more powerful Atmel SAMD21 based Circuit Playground Express. They, like many Adafruit products, are circular in shape for ease of use in education and wearable electronics projects,[10] along with the FLORA and Gemma, the companies wearable electronics development platforms. In 2017, Adafruit Industries best selling product was the Circuit Playground Express

NeoPixel



Mini NeoPixels with comparison to a Canadian quarter

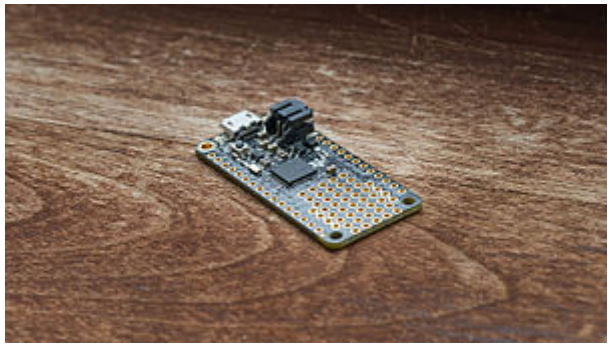
NeoPixel is Adafruit's brand of individually-addressable red-green-blue (RGB) LED. They are based on the WS2812 LED and WS2811 driver, where the WS2811 is integrated into the LED, for reduced footprint. Adafruit manufactures several products with NeoPixels with form factors such as strips, rings, matrices, Arduino shields, traditional five-millimeter cylinder LED and individual NeoPixel with or without a PCB. The control protocol for NeoPixels is based on only one communication wire. Adafruit provides an Arduino library[11] and a Python Library[12] to help with the programming of NeoPixels. In addition to the traditional RGB technology, Adafruit manufactures a red-green-blue-white (RGBW) variant of NeoPixel for all products except those that feature a NeoPixel Mini 3535. Those integrate an additional white LED in the package for extra possible color mixes and selectable white color temperature (the company sells single NeoPixels with a 6000K, 4500K and 3000K color temperature).

CircuitPython

In January, 2017, Adafruit introduced CircuitPython, a fork of the MicroPython programming language optimized to run on select Adafruit products[13]. CircuitPython currently runs on Adafruit boards with a flash memory chip and one of the following microcontrollers: Atmel SAMD21 (M0), Atmel SAMD51 (M4), and the Nordic Semiconductor nRF52840.[14]

In 2019, resources for CircuitPython were moved to circuitpython.org, a move to show that the number of third-party boards using CircuitPython had grown beyond those only manufactured by Adafruit.[15] This includes both CircuitPython for microcontrollers and CircuitPython on single-board computers using a compatibility layer Adafruit named 'Blinka', to access general-purpose input/output functionality and compatibility with a library of over 160 sensors and drivers.[16]

Feather development boards



A headerless Adafruit Feather M0 Basic Proto Development Board

The Feather development boards constitute Adafruit's broadest platform of "Arduino-like" boards.[17] The boards all share similarities in that they have the same form factor, same pinout, similar microcontrollers, feature lithium polymer battery charging. Each board has a special feature in addition to the microcontroller breakout, such as Bluetooth, Wi-Fi or cellular network connectivity or built-in prototyping space or SD card communication. The name "Feather" comes from the fact that the boards are small, thin, light and easily powered from a battery. In addition to the boards themselves, Adafruit engineers and manufactures "FeatherWings", which are expansion cards allowing the addition of features such as an LCD, a NeoPixel array or DC motor drivers.

Adafruit Learning System

In addition to manufacturing and selling electronic devices, Adafruit regularly publishes tutorials featuring their products. The tutorials show how to build projects, highlighting their products' abilities and strengths. The site hosts close to 1600 guides[18] and articles written by collaborators. The guides range from teardowns of existing wearable electronic devices to 3D printing projects to overview and introduction of Adafruit merchandise and how to build projects.

Presence on YouTube

Adafruit Industries has a substantial presence on the online video streaming website YouTube.[19] The channel has been active since April 2, 2006. The company was awarded a YouTube Silver Play Button in August 2015 for having surpassed 100,000 subscribers. Adafruit creates different types of videos, all on electronics, with most featuring one of their products. Each week for at least six years, several live shows have been streamed.

Ask an Engineer

This weekly show was started in 2010 in Fried's living room. The concept was that viewers could ask her questions about engineering while she was assembling an electronics kit and Phillip Torrone, her spouse, was preparing shipments. The show is broadcast on YouTube with behind-the-scenes content available on Discord. The company states that this is the longest-running live electronics show. Some of the sections of the stream are new products where Fried demonstrates new products; Time Travel, where the hosts look back on the world of makers, hackers, artists and engineers and often highlight a special person or event; 3D Printing, where they showcase a special project or product related to the industry; a Q&A session; and a trivia question, where the first viewer with the correct answer wins a product. There is sometimes a section dedicated to Raspberry Pi and Arduino news and a section where the hosts read a positive email they have received. Each week, a coupon code, which is valid for the night, provides a 10% rebate on everything available from the store except for gift certificates and software. The show airs on Wednesdays at 8PM ET on the company's YouTube channel and is still run by Limor Fried and Phillip

Torrone, with guests often present. As of February 2016, there have been almost 200 editions of the show, totalling almost 7 million minutes watched, a half million video views and 33 thousand playlist views.

Show-and-Tell

Show-and-Tell is Adafruit's live show where makers from all around the world share electronic projects they are currently working on. The show is first broadcast at 7:30PM ET on Wednesdays, and runs for 30 minutes. It is hosted by Limor Fried and Phillip Torrone and uses the Google+ Hangouts platform. Over the four years that it has been running, Show-and-Tell has been produced more than 200 times, collecting more than 2.8 million minutes watched, about 500,000 video views and with 27,000 playlist views.

3D Hangouts with Noe and Pedro Ruiz

3D Hangouts with Noe and Pedro Ruiz goes over the 3D printing industry (most typically about desktop FDM printers). Every week, on Thursday, a 30-minute edition is released where the two brothers discuss news about the industry, specific projects that they are working on, share 3D printing tips and tricks and answer viewer's questions and comments. They also showcase projects and prints from the online community. The show was started in 2014.

John Park's Workshop

The weekly John Park's Workshop show is broadcast live from John Edgar Park's workshop as he builds creative technology projects – from mystery boxes to ninja timers to synthesizers to coffee robots – while teaching viewers the skills to create their own. The creations made by Park demonstrate the weekly project (which is later developed into a tutorial on Adafruit's Learning System), covers fundamental tips and tricks for working with the featured tools and materials, interacts with viewers, and answers questions over chat messaging systems in YouTube and Discord.

Wearable Electronics with Becky Stern

Wearable Electronics with Becky Stern was Adafruit's live show dedicated to the wearable electronics industry. It was hosted by the American artist Becky Stern. It aired every Wednesday at 2PM ET and was produced for 122 episodes, from 2013 to 2016. The last edition was streamed on February 10, 2016.[20] In the show, industry news, projects, techniques and materials were covered and discussed. Also, viewers could ask the host their questions.

See also

- SparkFun Electronics
- Digi-Key
- Mouser Electronics
- Jameco Electronics
- Element 14

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External links

- Official website (http://www.Adafruit.com)

- Company GitHub repository (https://github.com/adafruit)
- CircuitPython Website (https://circuitpython.org/)
