Arduino Fever

The tale of a cute, blue microcontroller that fits nicely in the palm of your hand, and the expanding community of developers who love and support it. By Daniel Jolliffe

ARDUINO IS SPREADING RAPIDLY across the globe. But before you reach for the Merck Manual to find the symptoms you're sure to have, check this out. Arduino is actually an open source hardware project that can be programmed to read temperatures, control a motor, and sense touch, and gets its name from an ancient Italian king. And it's fun!

Named after the 11th-century king of Ivrea in northern Italy, the Arduino is both a cute, blue microcontroller platform that fits nicely in the palm of your hand and an expanding community of developers who support it, distributed across two dozen countries, four continents, and counting.

Decidedly 21st-century in its design and construction, the Arduino board is for anyone who wants to build a basic level of intelligence into an object. Once programmed, it can read sensors, make simple decisions, and control myriad devices in the real world.

Using it is a snap: first, hook up a few sensors and output devices to the Arduino, then program it using the free developer's software. Next, debug your code and disconnect the Arduino. Presto — the little blue Arduino becomes a standalone computer.

The original intention of the Arduino project was to see what would happen if community support were substituted for the corporate support that is usually required for electronics development. The first developers — Massimo Banzi, David Cuartielles, David Mellis, and Nicholas Zambetti — ran a series of workshops on assembling the Arduino, giving away the board to stimulate development.
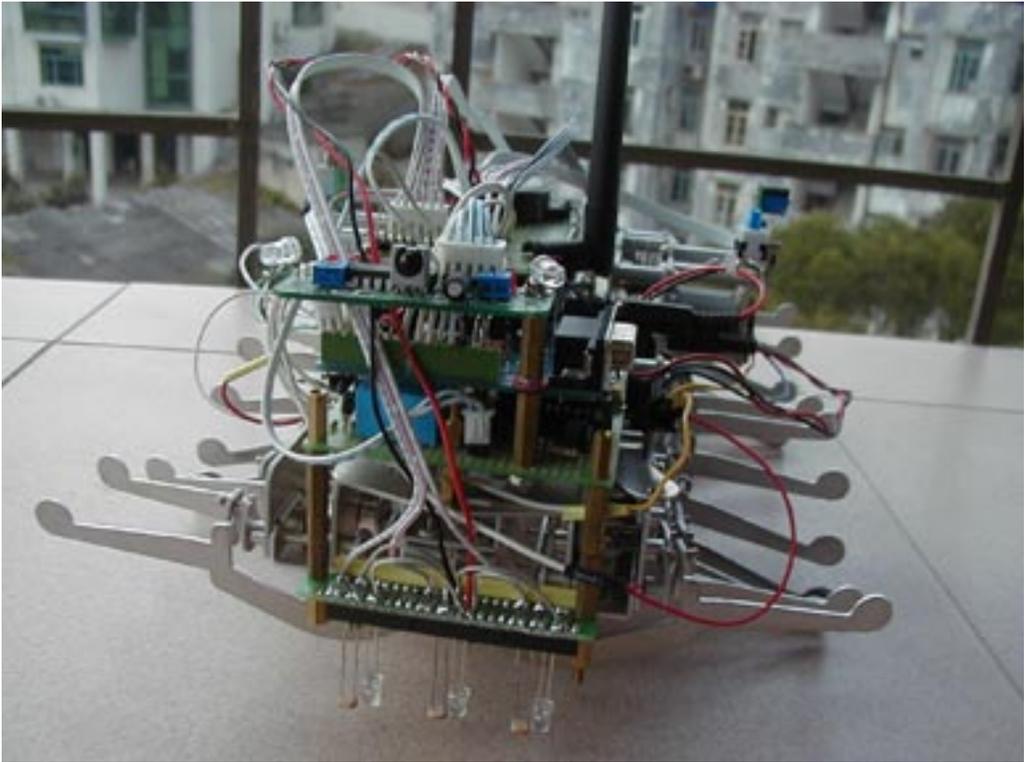
A scant year later, the project has spread far and wide the message that electronic design doesn't have to be a solitary, complex, and painful process, and that it needn't cost much if you have a little help along the way. Says Ren Wang, a student at China's Xiamen University who used the Arduino to power Eye, a walking robot: "Arduino is open and friendly. To make a cool robot was always my dream, and the Arduino made it come true."

Today there's a thriving website with sample code, tutorials, and a forum that serves as the meeting point for Arduino developers. While the original developers still give workshops, the project is increasingly a standalone endeavor, with newcomers taking up the idea that electronics can be a community effort.

Back in Ivrea, a friendly Italian manufacturer, who was courageous enough to support the project from its inception, still provides low-cost Arduinos, in both assembled and kit form. In Europe, the price is €20; Sparkfun (sparkfun.com) is the United States distributor and sells the USB version assembled for $30. And since the project is open source, all the plans, code, and instructions are available online free for those who prefer to roll their own.

Asked what's next, Cuartielles says: "Arduino for kids! We have been asked to evaluate the use of Arduino for technology classes in secondary schools
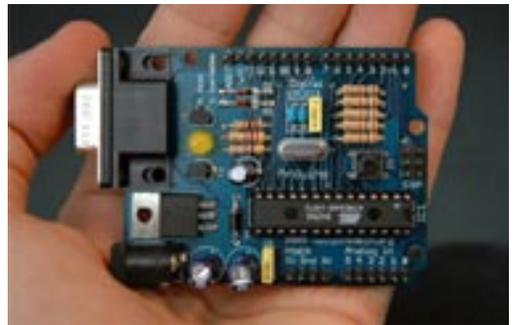
Arduino assembly workshop (previous page) at Malmo University in Sweden.

"Eye" (this page top) is a robot based on Arduino, designed and built by Ren Wang, a student at Xiamen University in China.

Arduino (bottom) in the palm of a hand.

in Madrid, Spain. Can you imagine one million kids a year making experiments in electronics based on this open hardware platform? It would be massive!"

To get in on the massiveness, and to become a contributor yourself, check out arduino.cc.

Daniel Jolliffe is the designer of *One Free Minute*, an anonymous public speech project. He wrote "Throw Your Voice!" in MAKE, Volume 04.