Making Trouble History

Saul Griffith
Squid Labs
Makani Power
Advisor / contributor : MAKE Magazine
Contributor: CRAFT Magazine
Industrial Revolution
Let me remind you that **craft** and its adjective **crafty** have been degraded and misapplied in modern English... they are used to express trickiness or dishonesty, where we ought to use guile or guileful.

The right meaning of the word craft is simply **power**: so that a handicraftsman signifies a man who exercises a power by means of his hands... to wit, a readiness of mind and deftness of hand, handed down from father to son and increased generation by generation: surely a class of men who possess such a power is to be honored and thanked rather than nicknamed by foolish, outlandish words.

---William Morris
We are now about to enter upon the examination of that school of Venetian architecture which forms an intermediate step between the Byzantine and Gothic forms; but which I find may be conveniently considered in its connexion with the latter style. In order that we may discern the tendency of each step of this change, it will be wise in the outset to endeavour to form some general idea of its final result. We know already what the Byzantine architecture is from which the transition was made, but we ought to know something of the Gothic architecture into which it led. I shall endeavour therefore to give the reader in this chapter an idea, at once broad and definite, of the true nature of Gothic architecture, properly so called; not of that of Venice only, but of universal Gothic: for it will be one of the most interesting parts of our subsequent inquiry, to find out how far Venetian architecture reached the universal
Harry Peach the “Dryad Leaflets”
Internet Revolution
YAHOO! Groups

Vibrant small interest groups trading tips and ideas...

More than 30,000 hardware and crafting groups!

This really is D.I.Y. (Do It Yourself), but now with others
The first magazine devoted entirely to DIY technology projects, MAKE Magazine unites, inspires and informs a growing community of resourceful people who undertake amazing projects in their backyards, basements, and garages.

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Coming soon! On newsstands April 24!

Current Issue

Volume 03: the Japanese Style issue. With DIY tutorials ranging from blushing finger puppets to Sumi paper marbling to hypertufa planters to gorgeous dorodango mud balls, knitted kimonos, a Harajuku-style T-shirt, and way more than we can list here, get ready to have no shortage of exciting crafting projects.
Comfort with customization

Desire to engage with physicality of objects
THE ELECTRIC TANK TOP

By Leah Buechley
[A] Silver thread (members.ccsenet.ca/ubik/thread/order.html)

[B] Surface mount LEDs: 300, or as many as you’d like. I used a super-bright led (Digi-Key part # 67-356-3-ND).

[C] AVR ATmega16 microcontroller (Digi-Key part # ATMEGA16L-8PC-ND)

[D] IC socket for your microcontroller (Digi-Key part # A9440-ND)

[E] AVR programmer (Digi-Key part # AFSTK200-ND)

[F] 1.5VDC power supply for your STR500 programmer. Available at RadioShack.

[G] USB serial adapter and included software. This will attach your programmer to your computer.

[H] Battery and holder
- I used a standard 9V battery (part # AS944)
- For the holder, use Digi-Key part # 1083K-KN-ND

[I] On/off switch (Digi-Key part # SW100-ND)

[J] 30-watt, or higher, soldering iron

[K] Lead-free solder (soldering iron tip)

[L] 4 square or ruler

[M] Assortment of silver and brass crimping beads

[N] Garment or a piece of fabric and a pattern


[P] Scissors

[Q] Sewing machine

[R] Insulation tracking tape from the author

For additional information about materials and equipment, visit www.cs.colorado.edu/~barchley/links/material_links.html
3. SEW YOUR LED PATTERN

3a. With a marking pen, mark the lines for your LED pattern on the garment. Also, mark where you want your microcontroller (IC socket) and power supply to be. You want a grid of conductive traces where the vertical traces do not touch the horizontal ones. A simple way to do this is to put one trace on one side of the fabric and the other trace on the flip side of the fabric, utilizing the fabric as a natural insulator. The lines for the vertical traces should be on one side of your garment, and the lines for the horizontal traces should be on the other.

I marked both sets of lines on both sides of my tank top to make sure my lines were well placed. Use a T square to get good right angles and straight lines.

3b. Make a bobbin of silver-coated thread for your sewing machine, and put it in the machine. Use a spool of ordinary thread for the top thread.

Using silver-coated thread in the bobbin of a sewing machine will allow you to sew conductive horizontal traces on one side of your garment and conductive vertical traces on the other side, taking advantage of the fabric as a natural insulator. As you sew, the bobbin thread will remain on the underside of the fabric you are sewing.

Q: So, if I want conducting vertical traces on where should I draw my lines?
A: You should draw them on the opposite side (Side B). The lines you draw will be facing up as you sew so that you can follow them. The conductive trace, from the bobbin thread, will be on the opposite side of the fabric (underneath your line).
4. **PREPARE AND SEW ON THE IC SOCKET**

Before you start sewing threads onto the IC socket, you should familiarize yourself with the pins of the microcontroller. Here’s the pin layout diagram for the ATMega16 chip.

All the pins labeled PA0-PA7, PB0-PB7, PC0-PC7, and PD0-PD7 are general-purpose input/output pins that can be used to power LEDs and the like. See my sample code and header files at url1 to see how to reference and control individual pins with your code. You can download AVR microcontroller datasheets from makezine.com/go/avr8.

4a. Use the following diagram as a guide to tell you which thread goes to which socket. (If you’ve chosen a different number of rows or columns, you’ll assign them to the PA-PD pins somewhat differently.)
This new craftsmanship embraces new tools, and merges with “rapid prototyping”
OMAX Corporation is the premier manufacturer of high precision waterjet machining centers.

Abrasive waterjets are used to profitably machine virtually any material. OMAX offers a complete line of machining centers, pumps, controllers, software, and accessories.

Designed to complement or replace existing processes such as milling, laser, wire EDM, and fine plasma, OMAX equipment will take you from drawing to finished part in minutes and make your shop more profitable than you thought possible.

An example of two aluminum bike frame components cut in 1/16" (1.5 mm) thick aluminum with a waterjet machine.
And in fact: a simple inkjet printer is a 50-micron resolution precision pattern-maker.
There’s an emerging ecosystem supporting digital craftspeople
Invisible Book Shelf
Invisible Book Shelf Cast levitation level 7 on your books! What You’ll Need Book Good sized "L" Bracket Carpet Knife Pen Small wood screws (of…
posted by dorxincandeland on Jan 29, 2007
comments (145)

LED Throwies
posted by Q-Branch on Feb 14, 2006
comments (357)

Shake it like a Tic-Tac!
Shake it like a Tic-Tac! Rechargeable led flashlight powered by magnets housed in the obligatory mints container. Parts PARTS: 150 ft. 30 gaug…
posted by MrMunki on Oct 1, 2006
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Screen Printing: Cheap, Dirty, and At Home
Screen Printing: Cheap, Dirty, and At Home You don't have to spend a ton of money on equipment or have a screen printing studio to make some prett…
posted by tracy_the_astonishing on Jul 29, 2006
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Mad Scientists Light
Mad Scientists Light A Maker friendly version of the Tube Lamp by Nik Wilmore. a captivating Light source suitable for normal usage and able to b…
posted by tim-1138 on Apr 7, 2006
comments (91)
Teddy Bear Remote Control

by leahculver on May 12, 2006

intro Teddy Bear Remote Control

The teddy bear remote sits nicely on your sofa or bed and can be used to control your iPod or computer. It's a cute modification to an RF remote control and is surprisingly soft! The project is difficult to make and requires quite a few odd materials, some soldering skill, and a lot of hand and machine sewing.
introduction Lego USB Stick

Creating a case out of Lego to house a USB memory stick. This has been done before but I haven’t seen it done like this :)

[Image of a lego USB stick]
and...
an emerging digital ecosystem supporting traditional craftspeople
New & Amazing! announced on APRIL 16

Check out these hot new tees, awesome new submissions and sexy new gallery photos!

Rollin Hatin by Cody Hudson
Magisterial Beauty by Lehel Kovács
Disbelief by Dan Sheffield

Living In Harmony by Josh Perkins
I Have Something To Tell You by Christopher Garcia
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- Bags And Purses
- Bath And Beauty
- Books And Zines
- Candles
- Ceramics And Pottery

Main Showcase
Sellers’ top picks from their shops

Mother’s Day Showcase
Sellers’ top picks for mom

Hand-picked items

- Pure Wool Shrug/Jac... amandawilliamsd... $95.00
- Implosion Flower Pe... anakinsglasseye $84.99
- flower circus by th... jennifermorrisb... $96.00

Transferring data from images.etsy.com...
Geolocator

http://www.etsy.com/geolocator.php

Home > Buy > Geolocator
Colors

Turquoise and Copper
janisekwerson
MORE..

$48

ADD TO CART

Purple Rainbow Mice (4)
MeandMum
Set of FOUR limited edition life size purple mice made from felt and 1960's curtains. Limited edition runs out when the curtains runs out! I hope you like them!

$30

ADD TO CART

MORE..
Colors

Wilma’s Wedding Wear Necklace...

bellina

$55

An updated take on a (Stone) Age-old classic: Glamorous stick pearls create this exotic and enchanting necklace. I’m sure the stylish Flintstone wife would have worn something this glam on her wedding day (hers was probably made of dinosaur teeth, but I th
Open Source Sewing Patterns

SEW your own clothes! POST in the community.

AURELIE Blazer...
By ParaNoire

country A-line
By rachelalfreda

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By erinbord

AURELIE Blazer
By ParaNoire

Find a SEWING PATTERN, DOWNLOAD and PRINT IT.
# Fashion School How Tos

## Fabric Know How

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## Pattern

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## Learning How To Sew

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## Printing

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<td>Printing Patterns at a Copy Shop</td>
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Creation and Style Gallery

Skirt
- country A-line
  By rachelalreda

- Skirt
  By Mirela

- Mirela's Stret...
  By Mirela

- Silk Skirt
  By Mirela

Bag
- The Dani Bag...
  By erinbord

- The Jenny Bag...
  By erinbord

- The Jenny Bag...
  By erinbord

- Felt Bag
  By Johanna

Accessory
- Rocket Pockets
- Mirela's Brace...
- ModCircle Tiss...
Whereas previous craft revivals were limited by word of mouth or expensive print, the open source one of today has better memory and distribution.