

VirGraf101: An Introduction to Virtual Graffiti

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What is virtual graffiti?

- Virtual objects and/or digital messages, images, animations, etc.
- Applied to or viewable from public locations
- Can be viewed through:
 - Computers
 - Mobile devices
 - Billboards
 - Signs
 - Side of buildings

What we're covering

- History of graffiti
- Examples
- Legal concerns and implications
- Who and why?

History: Prehistoric

- Supposedly done over 30,000 years ago
- Started with cave paintings
 - Used animal bone and pigments
- Debatable because:
 - Used during religious ceremonies
 - Sometimes endorsed by society

History: Ancient Greece

- First instance was in Ephesus
- Etched in stone and mosaics
- Supposedly a prostitution advert
- Picture of:
 - Heart-shaped handprint
 - Footprint
 - Number

History: Ancient Rome

- Included: curses, quotes, alphabets, declarations of love, slogans
- Some was preserved in Pompeii
- Most well-known:
 - “suspirium puellarum Celadus thraex”
 - Address for Novellia Primigenia of Nuceria
 - “mansueta tene”



History: Misc. Pre-Modern

- Mayans at the site of Tikal in Guatemala
- Vikings in Rome, Ireland, and Constantinople
- Renaissance artists at Nero's Domus Aurea
- Signature Rock
- French soldiers during the Napoleonic campaign of Egypt

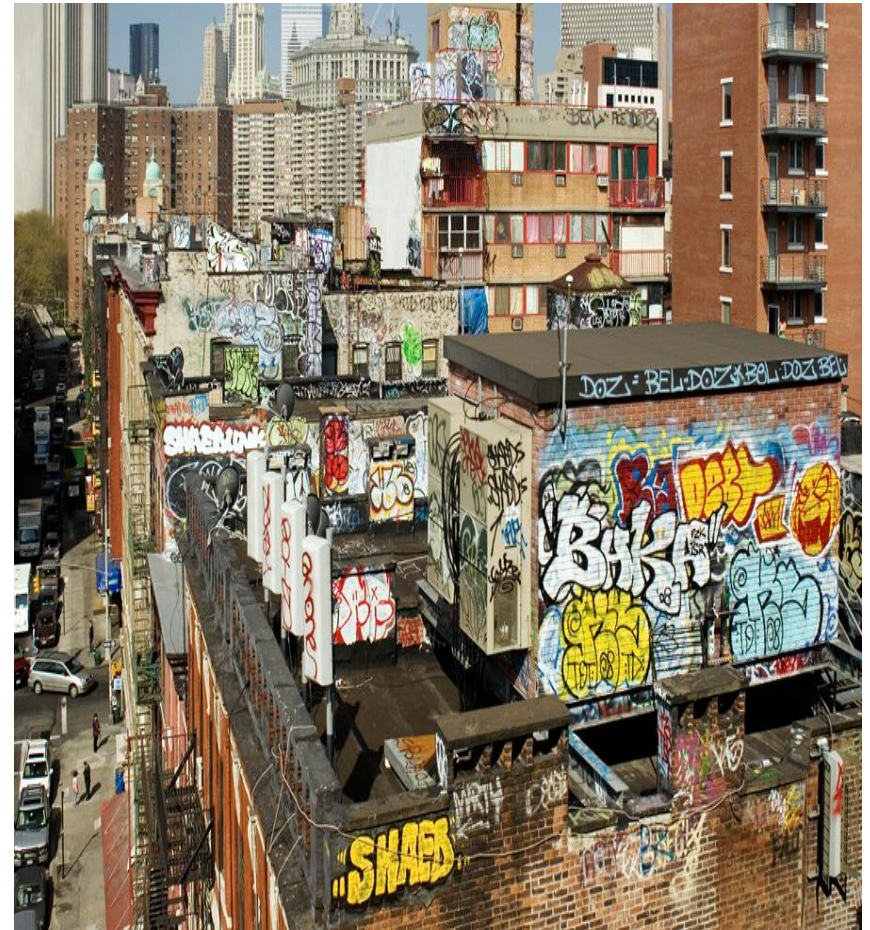
History: Modern Graffiti (60s-70s)

- Used mostly by political activists and gangs
- Moved from streets to subway systems
- Goal: out-tag and out-bomb other artists
- Polka dots, cross-hatches, and checkers became popular
- Spray paint helped a lot
- “Top-to-bottoms” came about



History: Modern Graffiti (1980s)

- Harder to be a graffiti artist because:
 - Crack
 - Police
 - Store owners
 - Metropolitan Transit Authority
- As a result, street and rooftop graffiti became more popular.



History: Modern Graffiti (2000s)

- Utilized as guerilla advertising by companies
 - IBM
 - Sony
- Mainstream pop culture started to catch on
 - Video games (Jet Set Radio Future, Rakugaki Okaku)
 - Clothes design (Marc Ecko)

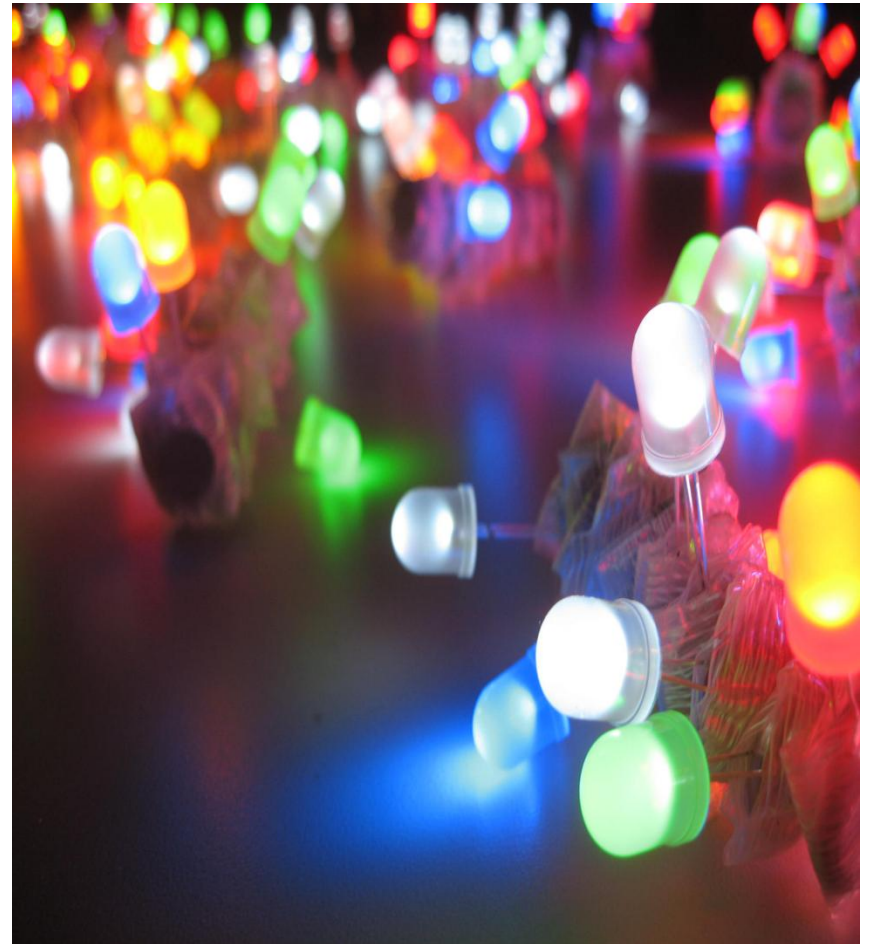


“Tried and True” brought to you by:



Throwies and Floaties

- Most common and popular forms of Virtual Graffiti
- Cheap, fun
- Materials:
 - LEDs
 - Batteries
 - Tape
 - Magnet(s)-or-Balloons



Electrograf

- Varying difficulty
- Varying price
- (Basic) Materials:
 - Stencil(s)
 - Paint
 - Magnetic paint
 - Conductive Paint
 - LEDs



L.A.S.E.R. Tag

- Difficulty lies in the setup
- Can get expensive
- Materials:
 - 1 Laptop - Core 2 Duo 1.83 Ghz
1GB Ram Nvideo Geforce Go 7300
256MB - VGA and DVI out.
 - 1 5000 ANSI Lumens 1024x768 DLP
Projector.
 - 1 Watec 221S Security/Astronomy
Camera with manual iris zoom lens
 - 1 Magicarm and super clamp
 - 1 Pinnacle PCTV USB capture card
 - 1 60mW Green Laser
 - Loads of AAA batteries.



Examples: Shiny and New

Electronic Roadside Construction Signs (ERCS)



ERCS

- Started showing up in mid- to late-2008
- One manufacturer in particular is used by DoT
- Started with “zombies ahead” and deteriorated from there
- Post from i-hacked has step-by-step instructions on how to do it
 - Posted in January of 2009, but is still accurate
 - Has pictures!

ERCS: Vulnerabilities

- Easy to find
- Unlocked or “secured” by a small master lock
- Control pad is in the access panel
- Usually no password
 - If there is a password, it’s usually a default password
- If not default, can easily be changed

ERCS: Don't be a dumbass

- Usually on a busy road (or right before one)
- If it warns of impending construction, don't do it right before or during construction hours
- Some areas may have cameras
- Use common sense
 - Gloves
 - Be a hoodie ninja
 - Walk, don't drive directly up to it

Outdoor Digital Billboard Network

ODBN: Types

- Verizon Telephone Network Interface
 - Testing instructions on site
- Wireless/Satellite
 - Open
 - Unencrypted
- Plug in
 - “secured” with a masterlock



ODBN: Vulnerabilities

- Network:
 - Packet sniffing
 - War dialing
 - Open ports
- Physical:
 - Social engineering
 - Security camera fail
 - No barrier/obstacle around base of billboard

ODBN: Update and Notes

- Uses digital signage software that is ran mostly on XP machines
 - They actively discourage the use of Apple or Linux machines (unless there's a XP virtual running)
 - Thinks XP security issues are irrelevant to digital signage software.
- Don't do this during peak hours
- Be inconspicuous
- Always mind the orange sticker

WARNING

**Potential
Arc Flash
Hazard**

Can shock, burn, or cause death.



PANDUIT PPS0507W2100

Digital Menus



Digital Menus

- No known cases of them being hacked (yet)
- Starting to grow in popularity in:
 - Movie theaters
 - Airports
- Uses same software as the digital billboards do
- Controlled usually in a manager's office

Legal Concerns and Implications

Governments Responses to Graffiti

- North America
- Australia
- Europe
- Asia

You could be charged with...

- Vandalism
- Hacking
- Breaking and Entering
- Upsetting public disorder
 - Graffiti Research Lab
- Murder

Who would be interested?

- Artists
- Extremists
- Governments
- “Damn kids”
- Hax0rz

Why are they interested?

- Guerilla advertising
- Advertise political goals
- Call for social emancipation
- Artistic expression
- Propaganda
- The lulz

Questions? Comments?

