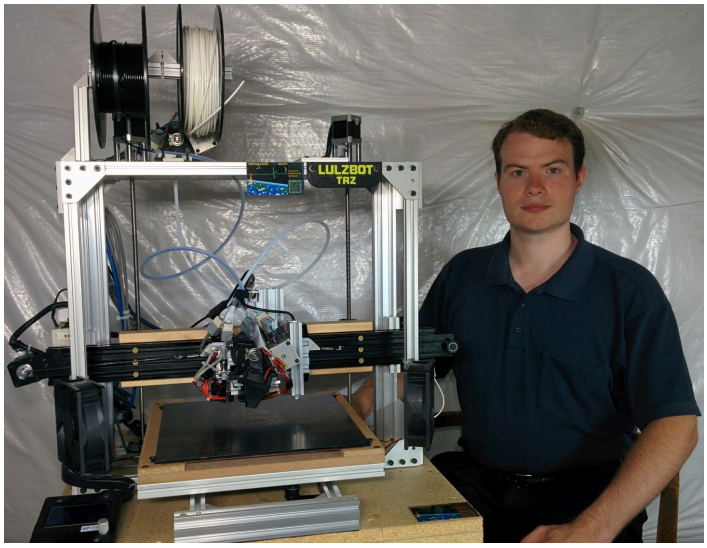
Recruiting

Matthew "mirage335" Hines

Maximum performance solutions.



Communication

IRC WebChat: http://webchat.freenode.net/?channels=%23%23mirage335
Discord:
Email: spamfreemirage335 ' a T' gmail 'dot ' com
Phone: 1-301-660-6414

Typically available between 10:00-22:00 EDT and often beyond.

More information available on request.

Direction

Helpful individuals or organizations are invited to participate.

Winners at the game of life bring the fullest diversity and quality to more players.

A transition from no wealth (ie. biological competence, what animals are born with), through wealth living on us (ie. creating technological tools), to us living on and once again independent of wealth (ie. technological competence, everyone born with the benefits of 'self-driving AI').

Eventually, while we still can before this universe ends in chaos, we must mostly fill that universe with unfettered opportunity. Eventually, we must be allowed uninterrupted, immersive, unlobotomized lives of our choosing with no limits whatsoever on our own forms, associations, experiences, cravings, desires, virtual reality, or neural interfaces.

My goal was and will long remain the widest possible empowerment - the expedient transition from no wealth, through living on wealth, to the unlimited wealth of self-driving AI for all to experience whatever life however they may wish.

Diversity, Equity, Inclusiveness (DEI)

Author 'mirage335' supports any reasonable path, valuing that many other persons have reasonable ideas, often adding new abilities and imagination.

For diversity, bring an apparently unique emphasis on pragmatism, possibilities, and brevity, so others may pursue their own unique interests.
For equity, continue to unequivocally oppose and reverse any bias whenever credible evidence is found, as well as support others who find, oppose, or reverse, bias.
For inclusiveness, press for the realization that people with different interests can in fact coexist in the same world and universe.

Sometimes I, 'mirage335', have had the disappointment of witnessing and hearing of seriously intentional biased derogatory remarks, explicitly stated unwelcome harassment, imposition of limits, insinuation that non-conflicting private inclinations are public conflicts of interest. An individual's potential, contributions, and experience of life, is wholly distinct from any other attribute, group, behavior. Any bias otherwise only causes harm, is irrational as such, and discourages productive individuals who will notice.

Discovering such discouragement is difficult enough, tolerating such discouragement has no rational excuse.

Strengths

*) Robust containment of complete hardware and software design toolchains with interprocess-communication within single filesystem directories.

*) Legacy multiplatform (ie. MSW), cloud, virtualization, and LiveCD/LiveUSB compatibility.

*) Strategic planning, technical point-of-diminishing returns due diligence.

*) Extensively self-taught, accustomed to efficiently exploring uncharted territory.

Official Titles

HacDC - Former Director at Large, Former Vice President and Director of IT, Admin Team, Contributing Member

May2012 - May2021

http://www.hacdc.org/

Official contact for SUPPLIES and EXPANSION funds.
Network infrastructure for St.Stephens Church and tenants. Shell/VPS servers for HacDC members.

Imagnus Medical - Director of Engineering

Feb2013 - Present

https://www.linkedin.com/company/imagnus

Interdisciplinary technical leadership, strategic planning.
CAD modeling, electronics design.
IT infrastructure management.
Electrical, mechanical, and optical prototyping - fabrication and assembly.

3D Connected Printing, ZXYPro - Software Technologist (formerly Chief Technology Officer)

May2016 - Present

https://zxypro.com/
https://web.archive.org/web/20180817164203/http://www.3dconnectedprinting.com/
https://www.etsy.com/shop/3DConnectedPrinting

Interdisciplinary technical leadership, strategic planning.
CAD modeling, electronics design.
IT infrastructure management.
CNC machinery design, maintenance, improvement.

Soaring Industries LLC

Mar2016 - Present

Owner, Sole Proprietor, CEO

Skills

Over the years, some specific skills have been put into use, by no means a complete list.

Hardware design, electronic, mechanical, and optical.
Mechanical Design
Optical Design
Electrical Design
Analog
Simulation

Design automation. Using gEDA, FreeCAD A2Plus.
FreeCAD
gEDA
GravitySketch
MakeVRPro

Fabrication and fabrication tools. Including 3D printing, CNC milling, laser cutting/engraving, photolitography.
Fabrication
Manufacturing
Photolithography
CNC Milling
3D Printing
Laser Cutting

Graphical design/editing. Using GIMP, Xournal, Inkscape, and others.
Graphics
GIMP
Xournal
Inkscape

Programming/Scripting. Bash, C, C++, Arduino, Python, PHP, and similar.
Scripting
Programming
Bash
C
C++
Arduino
Python
MySQL

Unix/Linux portability, Legacy/MSW compatibility.
Debian
Gentoo
Linux
UNIX
LiveUSB
Virtualization

Cryptography.
Cryptography

Signal Processing, statistical confidence testing, psychometrics.
Filter Design
Infinite Impuse Response
Statistics
Correlation
Confidence Testing
Psychometrics

Documentation.
Technical Writing
MediaWiki
HTML

Strategic leadership.
Instruction
Project Management
Git
GitLab
Research

Community

Have extensive experience leading community organizations, teaching freely available classes, and identifying issues in open-source code. Additionally, many other projects have been done collaboratively or in service of a larger community.

Assistant Teacher to Dan Barlow for CNC Mill Class

Class (at HacDC) began with Dan Barlow's outstanding theoretical introduction, which covered mounting hardware, cutting speeds, machine subsystems, and much more. Subsequently provided practical, hands-on individual instruction. Participants were independently able to attach appropriate mounting hardware, clamp workpieces, generate g-code using JSCut, and actually mill their designs.

CAD Modeling Class

Participants (at HacDC) were guided to create complex printable 3D models in under 20 minutes. Focus was on the fundamental geometric CAD workflow: sketching, constraining, extruding, face sketching, and assembling. After this tutorial, in-service part designs were demonstrated.

KVIrc Weak Encryption

Tested and found KVIrc encryption to use only ECB mode, which outputs identical ciphertext for identical inputs and keys. Filed bug report, and contacted developer CtrlAltCa via IRC. Proper CBC mode encryption became available and documented for KVIrc as a result. Encrypting an image in ECB mode, as Wikipedia demonstrates, dramatically reveals this is an incorrect way to use otherwise secure ciphers.

http://en.wikipedia.org/wiki/Block_cipher_modes_of_operation
https://svn.kvirc.de/kvirc/ticket/1169
http://en.wikipedia.org/wiki/File:Tux_ecb.jpg

Linux Kernel Tracer Bug

Reported and assisted diagnosis for a Linux kernel bug affecting kernel latency (ie. desktop interactivity). Bug fix was subsequently committed to mainline Linux kernel.
See commit db4c75cbebd7e5910cd3bcb6790272fcc3042857 at http://www.kernel.org/pub/linux/kernel/v3.x/ChangeLog-3.3.5.

Web2Project

Added URL-based autofill functionality.
	https://github.com/web2project/web2project/pull/284

Corrected Calendar URL feed link generator logic. Commit merged into mainline.
	https://github.com/web2project/web2project/pull/284

DAViCal

Minor bugfix regarding BIND request (external subscription) support. See dmfs.org for a description of this functionality.
	https://github.com/mirage335/davical/commit/60895b6aef8cfea6a2b2f29653d33f98c35e7bba
	http://dmfs.org/wiki/index.php?title=DAViCal

Tools

(notable)

ubiquitous_bash

At ~1MB of human written shell code, as of 2021, 'ubiquitous_bash' is expected to remain largest, most sophisticated, most robust, and most all purpose, shell script ever created.

Compressed header templates exist to provide hundreds of functions for small single-script projects. If you have a problem that needs a shell script, you need 'ubiquitous_bash'.

Software containment and interoperability, multiplatform structured programming middleware. Compatible with UNIX/Linux and Cygwin/MSW.

Build environments for arduino firmware (libraries, custom crystal-free boards, real-time debugger services), PCB photolithography (custom patched pcb2gcode binary), 3D printer fabrication (speed, cooling), etc, were fragile. Relying on Gentoo or Arch Linux to keep these dependencies usable while upgrading and installing other software would end up in a broken, unmaintainable state.

Hence, Ubiquitous Bash happened. Software would see the same directories even if absolute locations changed (ie. 'abstractfs'), have environment variables pointing to neighboring directories, dependencies would be installed automatically, tests would go far beyond usual CMake, and if necessary, filesystem parameters would automatically translate to run GUI programs through any virtualization backend (eg. ChRoot, QEMU, VirtualBox, Docker) which remained usable (always using the same raw disk image). Shared 3D space and multiple-input multiple-output pipes would be arranged as filesystem directories, automatically named pipes, triple buffers, etc, by the 'MetaEngine' module of the script. Later, ad-hoc Inter-Process Communication (IPC) would emulate the 'shared pair of wires' more typical of a hardware serial bus by both triple buffer and resetting pipes. All of this would also apply what few OS (both x64 and RasPi) customizations were still desired - copying these portable installations into bootable disk images and hooking developer functions into '.bashrc ' through ChRoot.

At least three years of shell scripting, >20k SLOC, and field testing, 'ubiquitous_bash' has acheived all objectives.

This document itself is self-modifying interleaved shell code from 'ubiquitous_bash' and markup.

scriptedIllustrator

Documentation generation as self-modifying file of interleaved shell code from 'ubiquitous_bash' and markup (using block comments of each language). Multiple simultaneous self-modifying output formats (HTML, MediaWiki, Markdown) and PDF conversion.

This document itself is created by 'scriptedIllustrator'.

BOM_designer

Hierarchical all-purpose Bill-of-Materials (aka. BOM) generator. Specifically intended to tally components from complex assemblies of other complex assemblies.

gEDA_designer

Generates, manufacturing (ie. gerber, centroid), distributor (eg. Mouser CSV), CAD (eg. SVG, DXF), model (eg. PDF, PNG), photomask (eg. PDF), files. Includes template and vector tests. May use similarly contained custom patched 'pcb2gcode' and/or 'pcb' as necessary for photomask, CNC drill/routing path, and autorouting compatibility.

arduinoUbiquitous

Arduino build environments, projects, configuration, self-contained relative to 'ino' file instead of user directories.

Project and library file absolute locations always appear at same location (eg. '/dev/shm/...') set by an automatically generated 'project.afs' file (ie. 'ubiquitous_bash' 'abstractfs'). Working ARM hardware debugging services included with randomized network port connection to 'gdb', 'ddd', etc. Robust serial port and hardware port communication interaction and upload. Extensible by imported shell script neighboring 'ino' file (eg. to implement firmware-specific serial port identification). Certified well-tested versions noted in README file. Among other features.

PatchRap

Modular and standardized machine wiring, power distribution. One wire from 3D printer 'motherboard' per limit switch cable, instead of three.

Instant 'PatchPanel' combining a breadboards with a generic PCB. Adapts logic, sensors, actuators, and data networks to inexpensive, highly shielded long haul Ethernet/Telephone cable. Carefully provisioned for a vast diversity of applications, including vehicles, industrial automation, and datacenter monitoring. CNC and stepper motor driving use cases have been specifically documented. Innumerable configuration options are thoroughly supported. Printable color coded labels are available for maximum safety in high-power and high-reliability systems. Product of Soaring Industries LLC.

https://github.com/mirage335/PatchRap/blob/master/PatchRap.pdf

LiveUSB/LiveCD

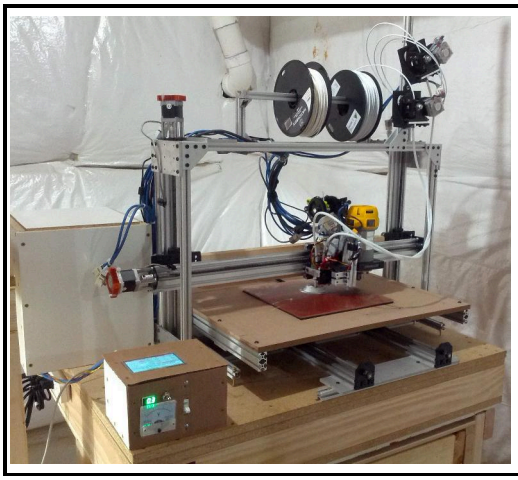
Built by 'ubiquitous_bash'. Hibernation Snapshot, SaveState (VM features on any virtualization backend or physical computer hardware). Bootable disk images from same build also will be used as development computer (x64), end-user computer (x64), cloud services (x64) for thin-client, and embedded (RasPi) OS distribution.

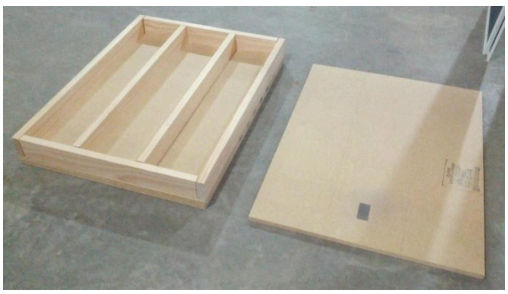
TazIntermediate

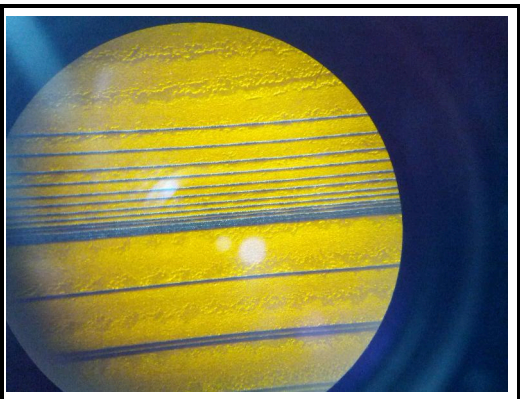
Field test of tool usability, from electromechanical design, to the point of cabling diagramming and assembly rehearsal in VR. Only the VR part not yet 100% FLOSS, otherwise portable to any Linux (eg. VM) machine.

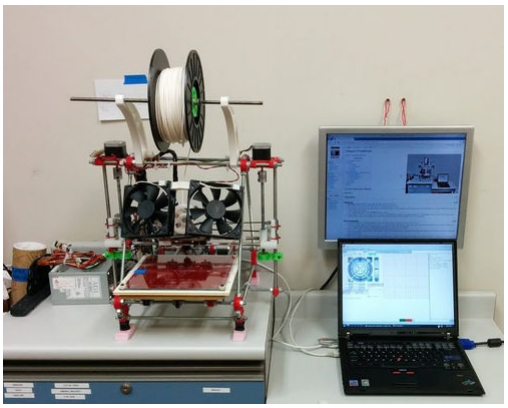
Projects

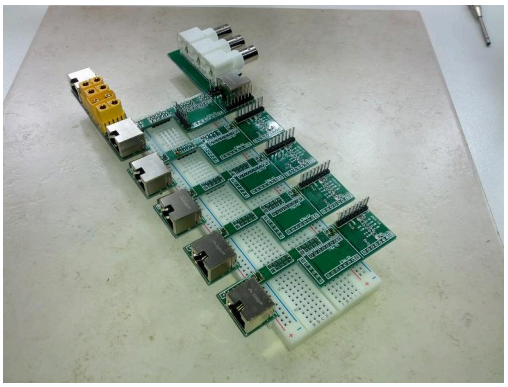
Assortment of side projects. Some continue as substantially important resources, others as expended resources having fulfilled a useful purpose and exemplified principles for future work.

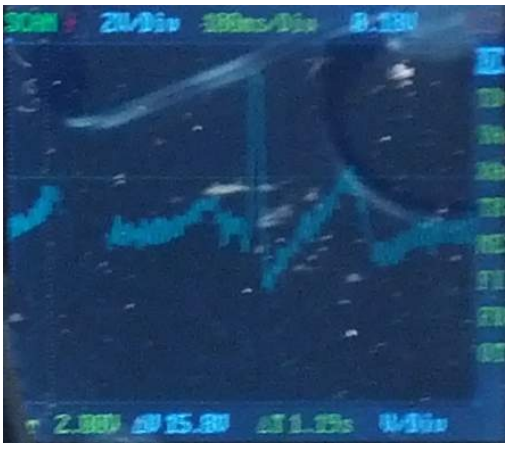


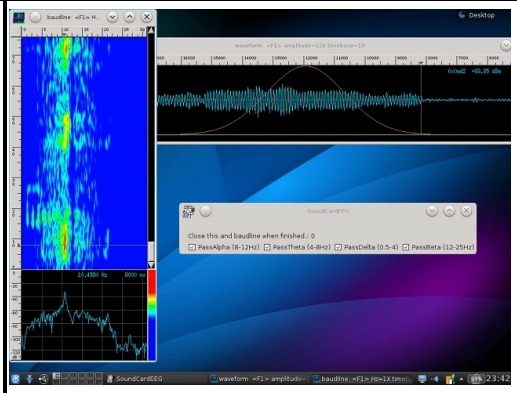


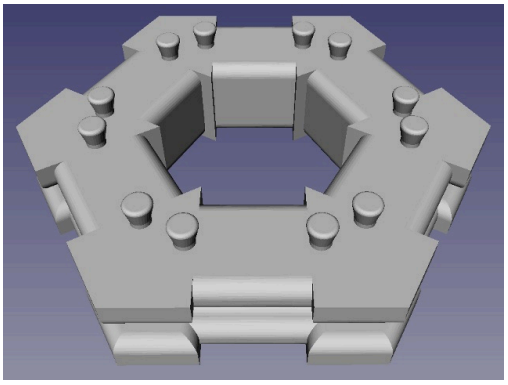


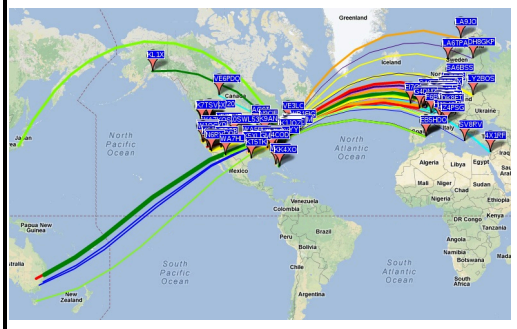


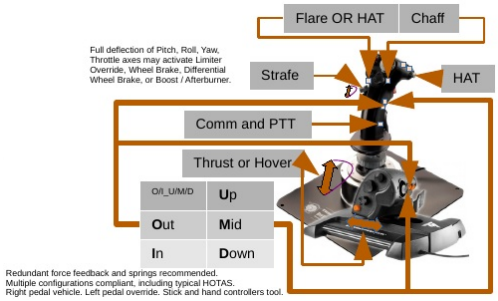


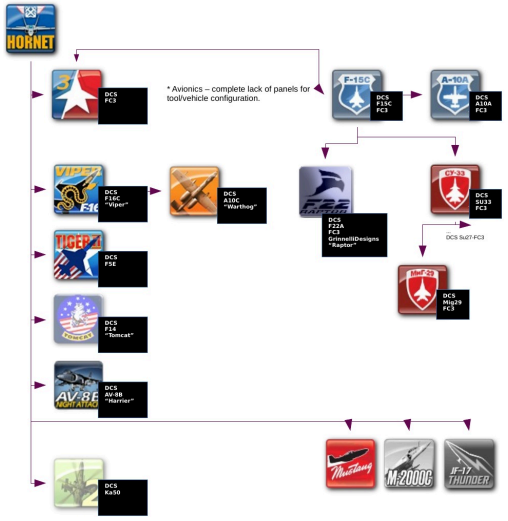


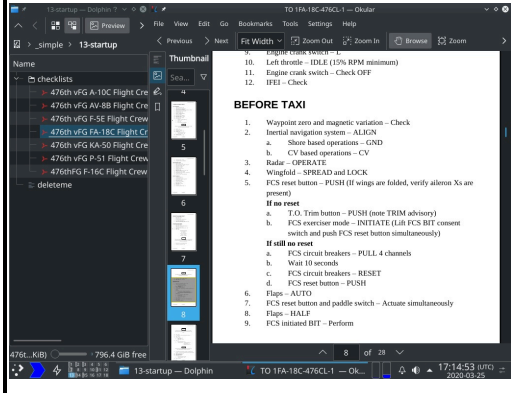


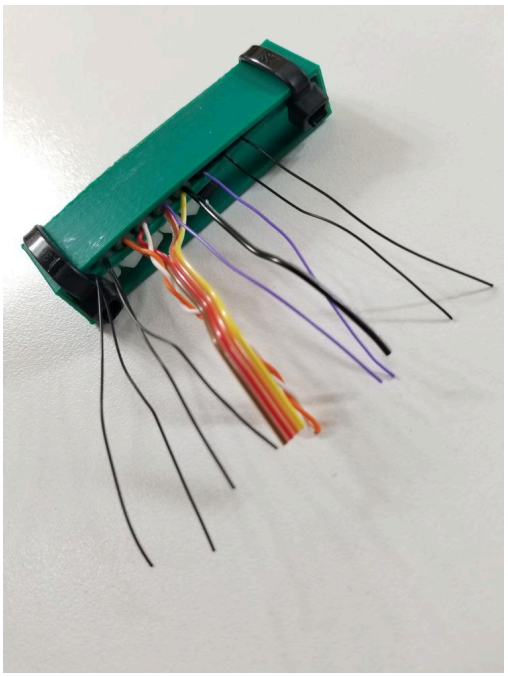


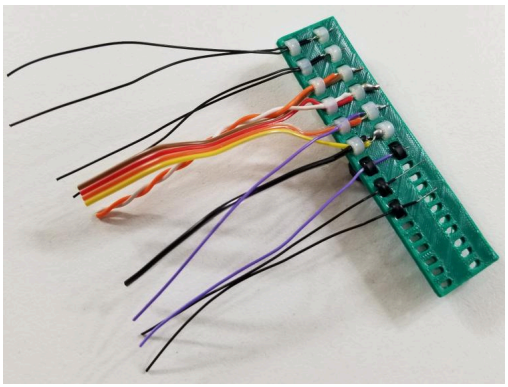


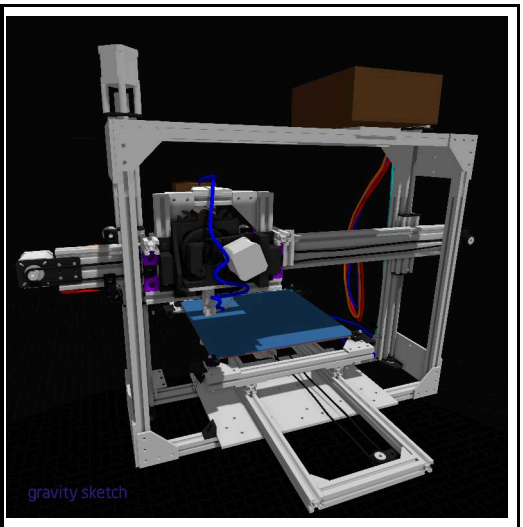

Flare OR HAT
Chaff
Full deflection of Pitch, Roll, Yaw, Throttle axes may activate Limiter Override, Wheel Brake, Differential Wheel Brake, or Boost / Afterburner.
Strafe
HAT
Comm and PTT
Thrust or Hover
O/I_U/M/D
Up
Out
Mid
In
Down
Redundant force feedback and springs recommended.
Multiple configurations compliant, including typical HOTAS.
Right pedal vehicle. Left pedal override. Stick and hand controllers tool.

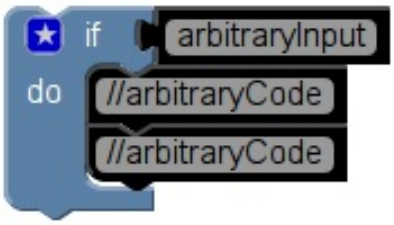

HORNET
* Avionics – complete lack of panels for tool/vehicle configuration.
DCS F-15C
DCS A-10A
DCS F16C "Viper"
DCS A10C "Warthog"
DCS F22A
DCS F-14 "Tomcat"
DCS F5E
DCS AV-8B "Harrier"
DCS Ka50
DCS Mig29
DCS SU27-FC3
Mustang
M-2000C
F-17 THUNDER


BEFORE TAXI
1. Waypoint zero and magnetic variation – Check
2. Inertial navigation system – ALIGN
a. Shore based operations – GND
b. CV based operations – CV
3. Radar – OPERATE
4. Wingfold – SPREAD and LOCK
5. FCS reset button – PUSH (If wings are folded, verify aileron Xs are present)
If no reset
a. T.O. Trim button – PUSH (note TRIM advisory)
b. FCS exercise mode – INITIATE (Lift FCS BIT consent switch and push FCS reset button simultaneously)
If still no reset
a. FCS circuit breakers – PULL 4 channels
b. Wait 10 seconds
c. FCS circuit breakers – RESET
d. FCS reset button – PUSH
6. Flaps – AUTO
7. FCS reset button and paddle switch – Actuate simultaneously
8. Flaps – HALF
9. FCS initiated BIT – Perform
10. Left throttle – IDLE (15% RPM minimum)
11. Engine crank switch – Check OFF
12. IFEI – Check

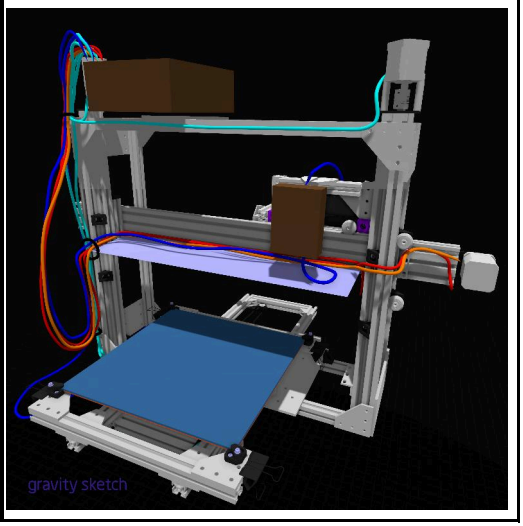









```
if (arbitraryInput) {
  //arbitraryCode
  //arbitraryCode
}
```



Industrial Computerized Numerical Control (CNC) Platforms

Designing, building, and operating a growing base of industrial Computerized Numerical Control (CNC) platforms.

TazMega and TazStiff are fully self-designed, built, and operated. TazUp simplifies the upgrade process for existing stock LulzBot Taz machines to a three-step process emphasizing the benefits of metal plates instead of plastic brackets.

Accessories applicable to virtually all CNC platforms have become available to the public through these projects. Most notably, RigidTable provides the strong base to resist stress that would deform less robust machines, and heavy tools simultaneously combining 3D printing extruders, milling spindles, and various lasers have been demonstrated.

https://github.com/mirage335/Taz_Mega
https://github.com/mirage335/TazMega-SDCard
https://github.com/mirage335/TazMega-Softload
https://github.com/mirage335/TazStiff
https://github.com/mirage335/TazStiff/blob/master/TazUpHowTo.pdf
https://github.com/mirage335/TazIntermediate

https://github.com/mirage335/RigidTable
https://github.com/mirage335/TazStiff/blob/master/Table/Table.fcstd

PrusaMendel

Collaboratively, have upgraded rigidity, lifespan, and usability for HacDC's Prusa Mendel 3D Printer. Responsible for more than half the printer's parts, through upgrades over a three year period, as well as for the printer remaining operational. Maintenance has included documentation, extruder fabrication, CNC milling stronger parts, spool holder fabrication, complete print-surface re-engineering, and eliminating manual priming from the printing process. Special thanks to Julia Longtin for timely parts and debugging assistance, and mentorship.

Since then the platform has manufactured the models crucial to Julia Longtin's CCC31 presentation on lost-PLA aluminum casting by consumer microwave oven heating. Consequently, the overall effort has been directly responsible for HacDC freely acquiring an outstanding LulzBot Mini. High-maintenance requirements of the PrusaMendel continued to provide a highly educational robotics 'school' as well after that.

Personally, the PrusaMendel was a very important introduction to 3D printing and much needed experience solving mechanical issues and quantifying the need for machine rigidity.

https://www.youtube.com/watch?v=JsSndSXFl8M
https://wiki.hacdc.org/index.php/Category:PrusaMendel

http://www.hacdc.org/2015/03/10/hacdc-wins-lulzbot-mini-3d-printer-hackerspace-giveaway/

Biosignal Amplifier

Animals (including humans) produce weak electrical signals, as hearts beat, muscles move, and neurons fire. Using all the best techniques and components, a uniquely low-noise high-dynamic-range biosignal amplifier has been achieved to pull out even the weakest biosignals for research purposes. Mirage335BiosignalAmp employs new research on low-noise amplifier chips and extensive measures to reject external noise such as feedback AC coupling, driven shields, and active probes. An ArduinoDAQ, 24bit ADC, is also onboard, paired with high-order digital IIR filters efficient enough to run in real-time on AVR (ie. Arduino) microcontrollers before handing off the raw audio format data through USB connection.

Complete schematics, PCBs, BOMs, documentation, repositories, and investor list, have been published.
Special thanks to Shawn Nock for creating oshpark conversion script, having inspired 'GEDAProduction' and later 'gEDA_designer', generating a variety of PCB related fabrication assets (eg. CAD models, gerber files, BOM, PDF photomasks).

https://wiki.hacdc.org/index.php/Category:BiosignalAmplifier

TestCart

Built up HacDC's test equipment cart to handle almost any electronics design problem, through self-built hardware, salvaged components, recommended purchases, and efficient cart layout. Among other things, capabilities were broad enough to construct superheterodyne HF receivers in a few minutes just by connecting equipment with BNC cables. After serving many useful purposes for a long time, unfortunately was disassembled due to temporary disuse and pressing need for floor space. Until then, this was most likely the most complete publicly available electronics test facility at or near the US East Coast.

https://wiki.hacdc.org/index.php/Category:TestCart

30MHz_LowPass

Air-core toroid, extremely high performance DC-HF preselection filter for extremely high dynamic range upconverting superheterodyne radios. Functional, tested, and using robust 3D printed electrical components of own manufacture.

Antenna

As a HacDC project, provided worldwide HF (shortwave) amateur radio communication, having served as the club's primary antenna for at least three years. This replaced an antenna remote amateur radio operator receivers confirmed as inoperable for transmission. Testing a variety of antennas in a rural open field demonstrated a 20m quarter-wave (5m height) vertical monopole antenna was most suitable. With an SGC-237 autotuner, all-band coverage from 1.8MHz to 29.7MHz has been available, meeting the requirements for automatic link establishment.

http://en.wikipedia.org/wiki/Automatic_link_establishment
https://www.hacdc.org/2012/08/17/new-amateur-radio-antenna/

AudioToResistance

Collaboratively worked with Project Byzantium development team at HacDC to trigger Push-To-Talk radio inputs using only energy received from audio line-level signals. Enables high-speed data transmission across VHF/UHF amateur radio technology, requiring only low-cost 'handie talkies' as transceivers. Assistance provided included several schematic designs and CNC milled PCBs in one night.

http://project-byzantium.org/
https://github.com/HacDC/AudioToResistance/blob/master/Basic.sch.png

Web Services

Hosted at HacDC, using servers Shimmer, Starlight, and Nebula. Personally setup and shared with the community. After serving useful purposes, especially VPS hosting for HacDC members, unfortunately defunct due to eroding physical hosting space and ISP changes. Reuse, donation to another hackerspace, or salvage, are all possible, as the components remain relevant, valuable, and especially reliable (notably having been manufacturered near the end of server exemption from RoHS).

http://hacdc.org/
https://wiki.hacdc.org/index.php/Shimmer
https://wiki.hacdc.org/index.php/Starlight
https://wiki.hacdc.org/index.php/Nebula

Flight Sim

Proficient (at least when not out of practice) in DCS World with FA18C and other simulated aircraft including F16C, to the point of complete startup procedures, avionics use, night carrier landings, formation flying, approach plates, etc. Partly used to perfect the 'commonControlScheme' single-stick compatible HOTAS specification, and alternative voice commands, carefully provisioned for mapping of all controls to buttons and axes for a much wider variety of tools and vehicles .

BusinessCard

Custom graphics. Only the satellite, antenna, clouds, stars, are clipart from OpenClipArt or Inkscape. All other work is an original design. Actual cards are color laser printed as seamless 12 card panels, then depanelized by HacDC's 40W CO2 laser cutter (and later Makersmiths's CO2 laser cutter).

Formal Qualifications

Self Taught, Aggressively

Amateur Radio Licensed, Extra Class, earned in one sitting. Callsign AB3PI.

CompTIA Linux+ Certified
	http://en.wikipedia.org/wiki/CompTIA#Linux.2B
	Issued Sep 2010
	No Expiration Date
	Credential ID P1B2BE5DBK1EYJZH

Hurricane Electric IPv6 Certification
	https://ipv6.he.net/certification/create_badge.php?pass_name=m335foundation&badge=3
	Name: mirage335foundation
	Level: Sage
	Current Score: 1005

Black Belt, First Degree

UMUC
	GPA 4.0, Summa Cum Laude
	Bachelor's of Science (Psychology) Degree
	Computer Science Minor

POLICY

Copyleft

Default - Public Doman
Resources without an explicit license declaration are automatically in the public domain.

Small - Public Domain
Small projects and libraries will be explicitly given an all permissive license to maximize adoption (eg. 'scriptedIllustrator').

Large - GPLv3
Large projects will be given GPLv3, *NOT* GPLv2.

Specialized - AGPLv3
AGPLv3 license may be imposed until sufficiently reassuring contributing and actively community engaging behavior is seen, if there are specific unusual risks of open-source code becoming unusable.

*) History (eg. Arduino) of overcommercialization and portability/compatibility neglect causing especially delayed and painful interoperability effort (eg. 'arduinoUbiquitous' firmware library, gdb debugging, etc, containment).
*) Unusual likelihood of entire project maintained behind software-as-a-service (eg. 'scriptedIllustrator' tinyCompiler)
*) Already predominant absence of availability of any similar essential resource except behind software-as-a-service (eg. 'BOM_designer').
*) Possibility for quoting out of context (eg. 'universalTechnologySpecificationTextbook') .
*) Unusual incentive to neglectfully substitute multiplatform host virtualization compatibility for cloud (eg. 'universalTechnologySpecificationTextbook' due to 'scriptedIllustrator').
*) Expected abandonment of interoperability and portability/compatibility except through predominant 'app store' and 'thin client'.

Nevertheless author 'mirage335' respects the reservations of such organizations as 'Google' regarding the virality of AGPLv3, and is willing to make reasonable accommodations. Normally the AGPLv3 license is only narrowly applied to code with no plausible end user or network service function (eg. 'arduinoUbiquitous' firmware compiler, 'scriptedIllustrator' tinyCompiler bootstrapping, 'BOM_designer' extremely specialized for CAD assembly, 'universalTechnologySpecificationTextbook' for developers, mostly only for the author, and only a static document for non-developers).
https://opensource.google/docs/using/agpl-policy/

Specialized - Wiki
For compatibility with Wikipedia, in addition to any other (ie. public domain or AGPLv3 compatible) license, Wiki pages at any site may benefit from the Creative Commons Attribution Share Alike license.

DISCOURAGED - GPLv2
GPLv2 is questionable, as accidental violation of the GPLv2 can cause massive problems for large projects, and usual text for GPLv2 may not include provisions to allow relicensing by any 'later version'. Case in point: it would be "technically quite hard" (Linus Torvalds) to dual license the Linux kernel.
http://www.gnu.org/licenses/quick-guide-gplv3.html

Authentication

Authentication without encryption is reasonable in some situations by limiting transaction rates, by physical location/direction,

and by revocation of multiple logins. By contrast, relying on encrypted logins by HTTPS/SSL, has a history of severe weaknesses, plaintext emissions, timing analysis, side-channel analysis, and official amateur radio incompatibility.

Plain HTTP may be used whenever possible. At all times (even as part of encrypted login web pages), some filetypes (particularly images) may remain unencrypted (eg. if served by CoralCDN).

RoHS

RoHS ban of leaded solder is of negligible benefit and substantial harm whereas a tax may have been more reasonable. Little change in environmental lead from bulk uses could reasonably be expected, and unintended consequences are severe.

*) Insufficient assurance third-party (especially small business) PCB assembly services have followed the many precautions to minimize tin whisker failures.
*) Non-availability of computer CPU/GPU/RAM/motherboard tolerant of long-term ambient cooling by liquid nitrogen, liquid helium, etc, due to tin pest.
*) Drastically worse risks during chip replacements by hot-air removal and reflow.
*) Drastically worse risk of damaging 3D printer control circuitry due to >1year backordered chip shortage.
*) Unnecessary disruption due to avoidable failure of older servers.
*) Possible loss of the dwindling supply of the most reliable data storage devices ever created - magneto-optical drives.
*) Data loss unpreventable due simultaneous tin whisker bridging failures including unintended simultaneous overwriting of multiple RAID arrays.

For the future, all industries must be wary of provoking such a ban instead of a more reasonable tax, as a consequence of any perceived irresponsibility on their part.

errata

Communication-errata

GPG Public Key (Generic, spamfreemirage335@gmail.com)

```
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-----END PGP PUBLIC KEY BLOCK-----
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Direction-errata

As a thought experiment, we should consider what may happen if some of our memories suddenly awoke in the life of another. We would think ourselves still very much the same person. Likewise, if a part of our brains were electrically connected, as parts of our brains are already connected internally, to others, we would perceive their transferred senses and thoughts as our own.

Our immediate perception of our selfish interests, is both a reality with which we experience life as problem solving from a single embodiment bound by single-threading and speed of light, as well as quite possibly also mere illusion.

Nothing about the universe guarantees the apparent fluctuations in fields we observe as electrons or photons bouncing in and out of our also replaced atoms in fact have any identify. During the infinitesimal times as photons exchange with our surroundings, as electric current passes in and out of us, as neutrinos go through us, or from a conscious moment of three seconds to the next, much less from one sleep to the next, and especially not from one universe through chaos to a possible next universe - there is no guarantee that our experience of life is not also a part of all else.

Do unto others as you would have them do unto you. Including allowing them to make choices as a part of the experience of life.

Because there is a risk they might actually be a part of you.

Meanwhile, the universe from which no guaranteed escape is possible ends in chaos. We cannot prevent all unpleasantness, only choose to live by solving the challenging problems of life while we can still make that choice.

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Winners at the game of life bring the fullest diversity and quality to more players.

Project success is happiness (ie. diversity and quality of life). Production is resources multiplied by their expiration (ie. resources * time). Effort is work people do not want to do (ie. person hours).

Derision of a less inflated learning curve is highly inappropriate, minimizing the learning curve, highly appropriate.

Capitalism, wealth, economic bottlenecks, traditional 1% elite, and delayed gratification by decades, are at best expedient, at worst, unnecessary evil.

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Seeking to develop open-source heavy industry underpinning a sustainable closed-loop economy.
Requirements are sought, maximum performance solutions identified, infrastructure built.

Veni, vidi, vici.

DISREGARD - All of those old goals as it turns out were intermediate steps, some now completed by others.
Requirements have been identified, maximum performance solutions have been designed, infrastructure has been built. Heavy industry has been found to have reached its limits. Not really anywhere to go, anything to see, or accomplish, no veni, no vidi, no vici, now only routine development.

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Individuals or organizations with skills, tools, connections, or a desire to learn are invited to participate.

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DiversityEquityInclusivenessDEI-errata

For diversity, equity, and inclusiveness, I have never found any credible evidence suggesting populations of people are significantly, much less substantially, different in their capacity for enthusiastic problem solving, and I have always viewed participation demographic differences (most blatantly underrepresentation of females in some multiplayer video games) as conclusive evidence of inappropriate social pressures that must be reversed. Under the diligent scrutiny that has long been applied, I find this absence of credible evidence extremely strong scientific evidence that no such differences exist. Moreover, scientific skepticism is about erring on the best side of caution. Many problem solvers have availed the rare opportunity to learn exceptional determination from solving a problem of their own, and their well educated intuition would be sorely missed both by their peers who need help discovering their own mistakes and by all who in any capacity support the effort to solve problems. Each such person is an irreplaceable investment in the future both by theirself and by the whole, each such person excluded, an irreversible setback.

To date, I have also worked with people of diverse backgrounds without reservation, and served on the Board of Directors of a 501(c)3 non-profit (ie. 'HacDC') with a mission of publicly available education and research.

Empowerment-errata

Thus far, my efforts have been focused on ensuring more equal empowerment of *ALL* persons by FLOSS toolchains, open sharing of research (eg. 'universalTechnologySpecificationTextbook'), and limited use of the currently proprietary VR software (ie. 'SteamVR', 'GravitySketch'). Increasingly, I have commoditized modern hardware and software design toolchains, to the point that a single person, from a single computer, with only typically available resources, can properly plan an entire project from hardware design, through firmware and software design, to VR wiring and assembly rehearsal, as demonstrated by 'TazIntermediate' and 'arduinoUbiquitous' projects, which were field tests of sorts that took approximately one year to prepare for.

Pen and paper are not sufficient, nor are smartphones and pocket calculators. Everyone deserves the opportunity to know of the science to cure their disease, compile native software (eg. bash, CMake, Raspberry Pi, Linux, MSW), to transfer analog data into computers (eg. /dev/ttyUSB , 'arduinoUbiquitous' , USB3 FPGA), to CAD model sketch/part/assembly (eg. FreeCAD A2Plus, Autodesk), to simulate physics (eg. COMSOL, ANSYS), to process signals (eg. GNU Radio, GNU Octave, Qalculate, LabView, MatLab), to draw wring in 3D, to rehearse assembly VR. No one should ever have to neglect or especially never learn to plan their projects properly simply because of 'pay-to-sit', or because the trade secret code cannot be integrated with other code. No one should be weeks to years of software installation, scripting, or training, away from such planning resources 'out-of-the-box'. Such are not even the trappings of encouraging innovation, these issues have unreasonably persisted.

*) BOM_designer
*) gEDA_designer
 *) Modified 'pcb' with autorouting compatibility.
*) arduinoUbiquitous
*) ubiquitous_bash

*) FreeCAD with A2Plus

*) universalTechnologySpecificationTextbook

POLICY_amateurRadio-errata

Prohibiting all encryption, limiting baud rates, and limiting bandwidth, with Amateur Radio or similar use of <30MHz radio spectrum is unreasonably silly for several reasons, including the possibility of daily authentication with the limited spectrum otherwise available, and significant thermal noise present in all radio transmitters/receivers indistinguishable from pure ciphertext transmissions. Absence of HF allocations to Part15 use is at this point extremely silly. But satellite services commonly exist now anyway, so who needs amateur radio.