Upcoming Meetings

Refer to the PATACS Event Calendar on the back cover or http://patacs.org/mtgdetpat.html for meeting time and location.

March 19, 2016 (Fairfax)
Learn 30: Apps for iDevices and Android
Presented by Stan Schretter

Stan will continue his discussion of apps for both iOS and Android. A recent study showed that use of mobile apps to obtain information is greater than the use of that for all web browsers, both mobile and PC based, combined!

Since he introduced "education" apps during his last presentation, Stan will continue on that theme and discuss his favorite apps for turning your mobile device into a "learning" machine vs just a bandwidth and time waster! You may be surprised on both what is out there and on Stan's most favorite "education" app.

Presentation: Ancient History/Modern Destruction—Using Science and Technology to Study Cultural Heritage Loss
Presented by Jonathan Drake

The growing availability of high-resolution commercial satellite imagery provides unprecedented capabilities for monitoring around the world, shedding light on events in remote locations. The ability to monitor remotely is of particular need when conflict creates non-permissive environments that result in long-term inaccessibility on the ground. Multiple actors often overlap in space and time and conflicting accounts, often based on incomplete or inaccurate information, can proliferate. The current conflict in Syria and Iraq serves as a dramatic case study of just such a conflict, and has involved widespread reports of intentional destruction of cultural heritage designed to erase the presence and history of rival social or ethnic groups. The type of damage varies according to the site, location, and degree to which it has seen active conflict, sectarian strife, and population displacement. As the extent of destruction caused by ISIS (ISIL or Da'ash) increases and the violence in Syria and Iraq expands it is vital to better understand the link between ethnic or sectarian violence and damage to cultural heritage sites.

This presentation will discuss the methods and means by which the American Association for the Advancement of Science's (AAAS) Geospatial Technologies Project is systemically monitoring sites across Syria and Iraq using high-resolution satellite imagery. The research identifies and quantifies damage to cultural heritage sites and has developed a method to determine risk to sites based upon a wide variety of geospatial

factors, ranging from local military presence to site accessibility. The difficulties encountered while conducting large-scale satellite imagery analysis will be discussed, such as identification of corroborating information, data storage and organization, workflows, and coordinating multi-analyst research.

About the speaker: Jonathan Drake is the senior imagery analyst at the AAAS Geospatial Technologies Project. He holds a bachelor's degree in physics from Dickinson College in Pennsylvania, and a masters in planetary science from Arizona State University. A former research assistant at the Space Telescope Science Institute and the Hawaii Institute for Geophysics and Planetology, he has over ten years of experience spanning the domains of planetary and terrestrial remote sensing. At AAAS, he has been involved in developing applications of imaging radar, UAVs, and thermal imagery to problems relevant to human rights, as well as analyzing visible and near infrared imagery in support of program objectives.

March 23, 2016 (Arlington)
Technology & PC Help Desk

Extended Question and Answer session; discuss topics of interest, share knowledge and get help with technology issues.

April 16, 2016 (Fairfax)
Learn 30: Recipe Apps
Presented by Leti Label

Presentation: Nanotechnology Vs. Cancer
Presented by Cindi Dennis, NIST

If You Missed It
by Geof Goodrum
Director, Potomac Area Technology and Computer Society
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If you can't make a meeting in person, remember that members can participate in meetings remotely and for free via Zoom teleconferencing (see http://zoom.us/, for Apple® OS X® and iOS, GNU/Linux®, Google Android™ and Microsoft® Windows®). Details are provided in e-mailed meeting announcements.

Remember: you must be physically present at the end of the meeting to be eligible for door prizes.

January 16, 2016 (Fairfax)

Learn 30: Highlights from 2016 CES
Presented by Geof Goodrum

PATACS member Geof Goodrum showed photos highlighting the latest products and technology trends at the Consumer Electronics Show (CES) in Las Vegas that he attended the previous week.

Geof started with a video recap of the show from the official CES web site (http://cesweb.org/News/CES-TV, "CES 2016 Closes Today, Makes History"). According to the show's sponsor, the Consumer Technology Association based in Rosslyn, VA, the show metrics include more than 170,000 attendees from over 150 countries, 3,800 exhibitors, and nearly 2.5 million square feet of exhibit space. As Geof noted, the photos he showed (https://goo.gl/photos/ZV2jkm9XH1sEmYAS8) were a selected subset, which did not fully encompass the scope of the show.

Virtual/Augmented Reality was a breakout theme at CES. A few of the better known companies displaying the latest VR headset technology were Oculus (https://www.oculus.com/en-us/), Samsung (http://www.samsung.com/global/microsite/gearvr/),and Vuzix (https://www.vuzix.com/). While gaming is the obvious application, there were companies featuring VR applications for Real Estate (http://www.vitriovr.com/), Music Concerts (http://www.vrtify.com/), and remotely operated equipment. The Kodak PixPro (http://kodakpixpro.com/Americas/cameras/actioncamera/sp360.php) and the Ricoh Theta 360 (https://theta360.com/en/) were two of several 360° HD video cameras well-suited to provide content for VR platforms.

Drones were common, ranging from Odyssey Toys' (http://odysseytoys.com/) Pocket Drone to the Ehang 184 (http://www.ehang.com/ehang184), which can carry a person. A unique item was the PowerUp 3.0 (http://www.poweruptoys.com/) that includes a streaming video camera and motors to convert a

paper airplane into a drone. The Federal Aviation Administration (FAA) also had a booth to answer questions and register drones (https://registermyuas.faa.gov/).

There were some 8K high definition televisions, but the prominent feature this year was 4K TVs with High Dynamic Range (HDR) displays that can handle a wide range of brightness and vivid color in a single scene (http://www.digitaltrends.com/home-theater/hdr-for-tvs-explained/).

Vehicle manufacturers showcased technology at CES. Chevrolet promoted electric cars including the 200 mile range 2017 Bolt (http://www.chevrolet.com/bolt-ev-electric-vehicle.html) and the 2016 Volt. Toyota displayed two hydrogen fuel cell concept vehicles. Ford showed its MoDe:Me folding frame electric bike as part of its Smart Mobility Plan. There were many demos from Mercedes Benz, Mitsubishi Electric and others of enhanced automotive displays and warning systems. Faraday Future (http://faradayfuture.com/) unveiled its much anticipated electric vehicle prototype at CES, the FFZERO1 race car; its first production electric vehicle is expected in 2017. There were demos of autonomous (self driving) vehicles and sensor technologies, such as Light Detection and Ranging (LiDAR) from Velodyne (http://velodynelidar.com/).

The trend of connecting everything to the Internet, i.e., Internet of Things (IoT), continues. Among other major appliance vendors, Samsung displayed refrigerators with large display touch panels for various apps on the door, and a washer with a special hatch to add the oft forgotten item without interrupting the cycle, and apps to remotely monitor the appliances. Connected medical monitoring devices ("Internet of Medical Things") were also common, as were biometric and wearable computing devices (i.e., like the Casio Smart Outdoor Watch, http://wsd.casio.com/us/en/, and fitness bands), and some vendors (http://www.opcomlink.net/View/Product/home/opcomfarm,

https://edyn.com/) provided devices and apps to maintain and monitor farms and gardens.

Below are some of other products that Geof highlighted.
- Laundry folding robot http://laundroid.sevendreamers.com/
- Self-cleaning cat litter box https://www.litter-robot.com/
- Self-adjusting infant car seat https://www.4moms.com/carseat
- Bright Tunes (Bluetooth speaker string lights) and Victrola http://www.ithomeproducts.com/products
- Casio 2.5D Printing Technology http://www.casio.com/html/whatsnew/cwhatsnew46.html
- SyFy Labs http://www.syfy.com/syfylabs/blog/announcing-syfy-labs
- Wireless Fishfinder https://buydeeper.com/
- PicoBrew https://www.picobrew.com/
- Raspberry Pi computing cluster http://www.picocluster.com/
- Remix Android OS for x86 PCs http://www.jide.com/en/remixos

You can search the complete list of exhibitors and product categories at http://ces16.mapyourshow.com/7_0/search.cfm.

Q&A Session

Below are some of the audience Questions and Answers during the meeting.

Q: How do I wipe data from a laptop hard disk before disposal?
A: Two free programs are Darik's Boot and Nuke (http://www.dban.org/) and Eraser (http://eraser.heidi.ie/). [See http://www.pcworld.com/article/261702/how_to_securely_erase_your_hard_drive.html]

Q: What is the best way to share photos with the family?

A: Suggestions included using Dropbox (https://www.dropbox.com/), Google Picasa (aka Photos, https://photos.google.com/, especially if you have a Google account) and Apple iCloud (https://www.icloud.com/, especially if you have an Apple device). You may want to check out the articles and tutorials on http://geeksontour .com/.

Q: How can I find duplicate files saved in different locations on a drive?
A: SyncBack software from http://www.2brightsparks.com/ can identify unique files, but not duplicate files. [See http://www.howtogeek.com/200962/how-to-find-and-remove-duplicate-files-on-windows/ for software solutions to this problem.]

Q: Can the Apple OS-X operating system be installed on a [non-Apple] PC?
A: Yes, but this violates Apple's End User License Agreement (EULA) for the software and Apple will not provide technical support. This may save some money but must be weighed against the lost support. [For those who want to try anyway, the place to start is http://www.osx86project .org/.]

Presentation: Apple Ecosystem and Devices

A guest presenter gave us an overview of current Apple products.

A quick survey of the audience revealed that many use an Apple device of some kind.

Apple doesn't care about making the 'most' products, but about making the 'best' products. Nevertheless, a Market Realist article (http://marketrealist.com/2016/01/apple-pc-manufacturer-experience-growth-2015/) notes that Apple was almost the only computer company making a profit in 2015, and was the only company to experience growth over the last five years. IBM shifted to using Apple computers (http://fortune.com/2015/05/29/apple-ibm-macbooks/), and Google uses more Macs than just about any other company, except for Apple itself.

Safety and the environment are important to Apple. Apple devices are compliant with Energy Star and EPA standards, and Apple is eliminating harmful chemicals from its products (https://www.apple.com/environment/).

There are several new features in the iPhone 6s (https://www.apple.com/iphone/). The latest iPhone has two microphones to improve noise reduction, a feature that will appear on Apple computers. The iPhone 6s also has an aluminum case, and stronger glass that originated on the Apple Watch (https://www.apple.com/watch/). Another feature introduced on the iPhone 6s is "3D Touch," or haptic feedback that responds to the amount of pressure in a touch with a tap of its own (https://www.apple.com/iphone-6s/3d-touch/). The presenter demonstrated features of 3D Touch, which include quick access to apps, viewing last app messages, and Peek and Pop (e.g., "peek" with short tap to view an email, "pop" by holding a press to open an email). However, some audience members with the iPhone 6s said that 3D Touch can be tricky to use. Regarding the iPhone's camera, the presenter stated that the number of pixels is not the defining thing. The iPhone 6s features "Live Photos," which capture images 1.5 second before and after the photo to create a short animation. The iPhone 6s can also capture still images from video. The iPhone 6 and 6s use Apple's own A9 processor, a third generation 64-bit processor that is powerful enough for a desktop. Apple's M9 coprocessor tracks all the sensor data from phone so the main processor can do other work. The presenter said that the iPhone 6 is the "best world phone ever made" as it supports twenty-three LTE bands suitable for use during international travel. Another feature is the Touch ID fingerprint reader, which works with the Apple Pay application to make it easy to authorize payments from the phone with a fingerprint.

The iPad Pro is the latest tablet in Apple's lineup. The display measures 12.9" diagonal and contains

5.6 million pixels. The main processor is Apple's A9X. The iPad Pro sports four speakers, and the tablet senses how the device is held so sound is always directed to the right and left and top and bottom speakers appropriately. The presenter encouraged everyone to try out the new Apple Pencil (https://www.apple.com/apple-pencil/) at an Apple Store, though it only works with the iPad Pro. Although Apple Co-founder Steve Jobs' concept was devices should only need a finger as a stylus, this is not appropriate for complex, technical drawings. The Apple Pencil is accurate to a single pixel, has low latency (i.e., it responds quickly), and includes pressure and tilt sensors. The Pencil supports the latest Bluetooth specifications, and is recharged by removing the cap to expose the connector. The Apple engineers thought to provide an opening in the cap, so a child who might get it caught in his/her windpipe could still breathe.

There was some audience discussion about obsolescence in Apple products. The presenter suggested that just because something new comes out doesn't make a previous version obsolete—it just needs the latest operating system. A five year old iPad2 is still a very useful tool. Apple trusts its users to decide when to upgrade and provides backwards compatibility for older hardware. However, an audience member noted that iOS 9 does not support the iPhone 4, which was an engineering decision. [Note that it can be risky to use devices on the Internet that no longer receive security updates, even if the hardware is still functional.]

The latest Apple MacBook (https://www.apple.com/macbook/) is the "thinnest and lightest notebook yet" at 13.1 millimeters thick and 2 pounds. The 12 inch diagonal display has a resolution of 2300x1440, and a viewing angle of 178 degrees. The processor is an Intel Core M. It is also 30% more energy efficient than previous MacBooks, with no fan, contoured batteries to fill all spaces not used by the motherboard and touchpad, and up to nine hours of battery life. The keyboard is all new and more reliable, with a "Butterfly" mechanism to ensure that keystrokes are recorded at any angle. The keycaps are thinner, and there is a single light emitting diode (LED) under each key to illuminate the keyboard. The trackpad is similar to 3D Touch on the iPhone 6s, with force sensors under the trackpad to detect the slightest touch and amount of pressure, and the "Taptic Engine" to provide feedback. This MacBook has only one connector, type USB-C (https://en.wikipedia.org/wiki/USB_Type-C), which supports DisplayPort 1.2 and USB 3.1 specification with data rates up to 5 Gbps. Apple has various I/O adapters available that connect to this port. The connector does not support Thunderbolt technology, instead focusing on support for wireless devices. The MacBook supports Bluetooth devices and 802.11AC wireless networks.

Below are several questions and answers from the presentation.

Q: How has Apple's relationship with Adobe changed, and what is behind the loss of support to user groups?
A: The presenter is not aware of an issue with Adobe, but Apple supports user groups. Visit the https://www.apple.com/usergroups/ website.

Q: Why is Apple not opening up development of apps?
A: Join the Apple development group (https://developer.apple.com/support/). Apple supports development of private apps that are not necessarily published.

Q: What about Apple battery life?
A: See https://www.apple.com/batteries/ for information about Lithium-Ion batteries. It is not necessary to drain a battery fully before recharging to achieve maximum battery life.

Q Can the Apple Mac use a GPS?
A: The iPhone has a built-in GPS. A Mac computer can check WiFi and cellular towers for its location.

Q: There was a recent story by CBS about the closed nature of Apple. Are there any official or unofficial sources for details?

A: Apple is secretive because other companies copy its products. Very few people see Apple products before the official release. Good sources for information are http://appleinsider.com/ and http://www.macdailynews.com/.The slides for the Learn 30 and main presentations are downloadable as PDF files from the PATACS Recent Meetings web page (http://patacs.org/recmtgspat.html).

Musings of an Apple Tyro

by Lorrin R. Garson
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OS X El Capitan

Let me tell you about my experience with El Capitan, which was released to users on September 30, 2015. I waited until the end of December to install it (version 10.11.2, see http://apple.co/1J5gYqz) on our three Apple computers to allow time for the kinks to be sorted out. Unless there is some compelling reason I don't like to install just-released software and be on the bleeding edge, especially for my wife. El Capitan is not a major, compelling release but rather a collection of minor changes and improvements. So far (as of January) I haven't found any substantial "gotchas". El Capitan is worth the effort to install and it's free.

Here's what I've observed and for the most part liked.

Installation: It takes about an hour to download and install from the App store. This is with somewhat high end computers (two 21.5-inch iMacs with Core i7 3.1 GHz CPUs and a 13-inch MacBook Pro Retina with a Core i5 2.6 GHz CPU; all three machines have SSDs; 50 Mbps up and down FiOS Internet connectivity). Most of the hour is spent waiting for things to happen. Have user, Mail and your Apple passwords handy.

Performance: There is an improvement in performance, detectable but not profound.

Mail:

a. Messages can now more easily be deleted by left-dragging one finger across the mouse and clicking on the red rectangle marked "Trash". For those using a track pad, left-drag with two fingers. Likewise, messages can be marked as unread by right-dragging and clicking on the blue rectangle labelled "Mark as Unread".

b. Prior to El Capitan, when the Mail app checked for new mail, the message "Incoming Mail..." was displayed, which really meant "checking for new mail". That message has been changed to the more accurate "Checking for Mail...".

c. In sending a message from, say, ABC@domain.com to ABC@domain.com, the message does not go the ABC@domain.com mailbox but rather to the "Important" mailbox. A bit strange.

d. During the initial installation of El Capitan, I encountered a problem with Mail attempting to set up an outlook.com e-mail account. It just didn't work. However, subsequently I was able to set up this account using the normal "Add Account" procedure.

Spotlight: This function has noticeably improved especially its natural language function. For example, you can search (and retrieve) for such things as "documents I worked on yesterday" or search "weather" and you'll get a weather report right where you are.

Full screen Split View: You can now see two windows side-by-side in full screen mode. It's a bit clumsy but becomes automatic with experience. Microsoft Windows does it so much better!

Airdrop: This function that allows file transfer between Apple computers within 30 feet of each other (no WiFi or Internet needed) now seems to be more stable. Heretofore my experience was it was hit-and-miss.

Safari: Do you get annoyed when sound comes blasting when a commercial video pops up when you're on the Web? You can now turn off the sound by clicking on the blue speaker icon on the active tab. Whew!

Where Is My Mouse: Locating the cursor can sometimes be a challenge. With El Capitan, just wiggle the mouse and a large cursor will temporarily appear to show you where it is. The trackpad works similarly

Maps: This application has improved but I still prefer Google Maps.

Security: By default, El Capitan has "System Integrity Protection" turned on. This security measure prevents even the administrator from tampering with directories and processes deemed to be a security risk. Most users won't notice a difference but improvements in security are welcomed.

For more information see http://bit.ly/1Otk7x7, http://bit.ly/1RPYXOl and http://bit.ly/1RPZgZm.

Replacing USB-2 with USB-3

If you are still using USB-2 devices, you may want to consider replacing them with USB-3 equipment, especially thumb drives. USB-2 devices can reach speeds of 60 MBps whereas USB-3 devices can go up to 625 MBps, although in practice 400 MBps seems to be the norm. Even at 400 MBps, this is a speed improvement of 6.7 times faster. USB stands for Universal Serial Bus. See http://bit.ly/1RnVPKV for more information on USB.

Each successive generation of USB is backwards compatible with previous versions. Older devices work in newer sockets and newer devices work in older sockets, although at the slower speed.

Sharing Office 365 Home

Are you aware that you can share your Office 365 Home subscription with up to four people? Or better yet, perhaps you have a friend or family member who is willing to share their Office 365

Home subscription with you! Each individual sharing a subscription must have a Microsoft account, which is free. Each person sharing a subscription gets 1 TB free OneDrive storage and 60 Skype minutes calling time per month to mobile phones in eight countries and to landlines in 60+ countries.

Our son recently invited us to share his Office 365 Home subscription and we upgraded from Office 2011 on our Apple computers to Office 365. Office 365 is an improvement over Office 2011 but it isn't dramatically different, at least for light to moderate use. See http://bit.ly/1WblDJy for details. It's worth the upgrade— especially if it's free.

2015 a Bad Year for Cyber Attacks

Although depressing, you may want to read an article in PCWorld entitled "The most innovative and damaging hacks of 2015". It's enough to make you want to move into a one-room log cabin in Montana with no electricity or plumbing... well, perhaps not that bad. See http://bit.ly/1mYwPgq.

Open Source Software of the Month

by Geof Goodrum
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Kernel Source – v4.4.1. http://www.kernel.org/. Free GNU General Public License source code for all platforms by the Linux community.

LibreOffice – v5.1. http://www.libreoffice.org/. Free Mozilla Public License source code and executables for Microsoft® Windows®, Apple® OS X® and GNU/Linux® by The Document Foundation. LibreOffice is a powerful office suite; its clean interface and powerful tools let you unleash your creativity and grow your productivity. LibreOffice embeds several applications that make it the most powerful Free & Open Source Office suite on the market: Writer, the word processor; Calc, the spreadsheet application; Impress, the presentation engine; Draw, the drawing and flowcharting application;

Base, the database and database frontend; and Math for editing mathematic equations. LibreOffice native document standard is OpenDocument, but includes filters to import and export a wide variety of document file formats, including Microsoft Office, Adobe PageMaker, Corel WordPerfect, PDF, and many legacy formats. LibreOffice has localization (menu support) for 110 languages with writing aids for over 140 languages, and supports macros, document templates and over 1,000 program extensions.

This is the first release of the 5.1.x branch of LibreOffice. LibreOffice 5.1 comes with many improvements in speed and offers a completely reorganized user interface, and several improved features targeted at enterprise deployments: better support for ODF 1.2, interoperability with proprietary document formats and file management on remote servers (e.g., Google Drive, Alfresco, Sharepoint).

Pingus – v0.7.6. http://pingus.seul.org/welcome.html. Free GNU General Public License source code and executables for Microsoft® Windows®, Apple® OS X® and GNU/Linux® by Ingo Ruhnke. Pingus started at the end of 1998 with the simple goal to create a Free clone of the DMA Design puzzle game Lemmings™.

The player takes command of a bunch of penguins and guides them through 77 levels.

Since the penguins walk on their own, the player can only influence them by giving them commands, like build a bridge, dig a hole or redirect all animals in the other direction. The goal of each level is to reach the exit, requiring multiple command combinations. The game is presented in a 2D side view.

Pingus doesn't try to be an exact clone; it includes a few ideas of its own like the worldmap and secret levels. It has also a few new actions, like the jumper that wasn't present in the original game.

Rust – v1.6.0. http://blog.rust-lang.org/. Free Apache License or MIT License source code and executables for Microsoft® Windows®, Apple® OS X® and GNU/Linux® by Graydon Hoare and the Rust Project Developers. Rust is a systems programming language that runs blazingly fast, prevents segfaults, and guarantees thread safety.

Features include:
- zero-cost abstractions
- move semantics
- guaranteed memory safety
- threads without data races
- trait-based generics
- pattern matching
- type inference
- minimal runtime
- efficient C bindings

Bridge Designer – v2016. https://bridgecontest.org/. Free GNU General Public License source code and executables for Microsoft® Windows® and Apple® OS X® by Gene Ressler and Engineering Encounters. Bridge Designer is the official software for a national virtual bridge engineering contest with prizes for middle and high school kids, grades 6 to 12, but anyone can enter for fun.

Features include:
- Design a virtual bridge and compete nationally for scholarships or a computer!

- Learn about engineering and design.
- Have fun testing and improving your designs with your friends.
- Teachers, school districts, states! Run your own local contest with our support.
- Cool game quality animation of bridge test with OpenGL.
- BD (since 2013) is code-signed for your computer's safety and Windows 8 and Mac 10.7+ security compliance!
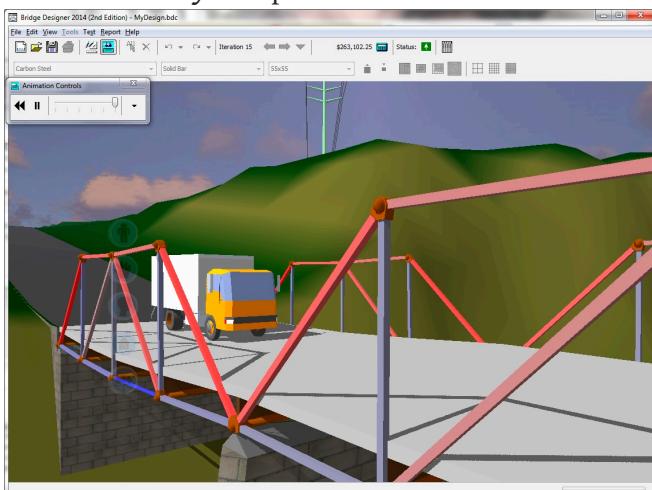
The "Internet of Things" or IoT - More Common But Hackable
by Ira Wilsker

WEBSITES:

http://www.cnet.com/news/Internet-connected-homes-open-the-door-to-hackers/
https://www.cesweb.org
https://www.cta.tech/Blog/Articles/2015/December/VIDEO-The-Wearables-Making-Us-Smarter-More-Fit-an.aspx
https://en.wikipedia.org/wiki/Internet_of_Things
https://nest.com
http://www.forbes.com/sites/josephsteinberg/2014/01/27/these-devices-may-be-spying-on-you-even-in-your-own-home/
https://www.shodan.io

A few years at the Consumer Electronics Show (CES) in Las Vegas, I was intrigued by the numbers of both prototype and production items that were evolving into what is now known as "the "Internet of Things", or "IoT". For the majority of us, when we think of the Internet, we think of our Internet connected computers, tablets, and smart phones. What many of us are not well aware of is that the Internet of Things is beginning to be much more common, and the IoT is already around us in a big way.

When I was last at CES, I was amazed at how Internet connections had already made their way into household appliances, and other electronic devices. At CES I saw products being introduced by major appliance manufactures that had connected intelligence built into them.

Among some of the most impressive items that I saw demonstrated were what appeared to be conventional residential kitchen refrigerators that had what appeared to be a flat screen tablet on the front of the door, as well as other types of sensors and readers built into the appliance. The tablet on the front door could be connected to the Internet via Wi-Fi and used to order groceries from participating supermarkets, display recipes, and create shopping lists. A small bar code reader was installed on the door that could read the UPC codes on products, adding those items to a digital shopping list that could be remotely printed, or sent directly to the chosen supermarket. The tablet on the refrigerator door would also display digital coupons and other promotions, enabling the owner to instantly add the promoted item to the grocery list.

This Internet connected refrigerator, as well as IoT connected washers, dryers, dishwashers, air conditioners, stoves, ovens, microwaves, and other major appliances also incorporated a "service connection" which monitored the physical operating condition of the appliances. These appliances utilizing their Internet connection, typically Wi-Fi, would report their operating condition, suggest repairs and maintenance, provide or order a list of replacement parts, display do-it-yourself repair instructions, or contact a repair service if necessary. Most of these devices would actually

send an email or text message to the appliance owner alerting him of the issues.

Many auto manufacturers currently offer "OnStar", "BlueLink", or other types of cellular or Internet connected monitoring systems that can report on maintenance issues, service reminders, and other issues, as well as providing a method of emergency communications. My wife's car periodically sends her an email listing the mechanical condition of each of the major components on her car.

We are seeing much more of our homes being controlled or secured by the IoT under the general topic of "Building and home automation". Most modern home security systems can be remotely accessed and controlled by cell phone; security cameras can display their images on remote devices anywhere. Lamps can be remotely controlled to turn on or off by remote command. Even our utility usage and thermostats can be accessed remotely. The very popular Nest thermostat, along with an increasing number of competitors, offers Internet connected control of household temperatures, as well as smoke detectors and remote cameras. My new "smart TV" is connected to my home data network which allows me to use my smart phone as a fully functional remote to not just control the TV, but to also search through dozens of streaming media services to watch countless movies, TV shows, videos, and other content, all connected by my home Wi-Fi network.

A review of local industry, health care facilities, public utilities, transportation systems, and other commercial enterprises are rapidly becoming more involved with the IoT. Look at your water, gas, and electric meters; many are already Internet connected in order to speed automate "meter reading" saving time and money. In the medical field, health monitoring and diagnostic equipment is becoming more connected to the Internet. According to Wikipedia, "These health monitoring devices can range from blood pressure and heart rate monitors to advanced devices capable of monitoring specialized implants, such as pacemakers or advanced hearing aids. ... Other consumer devices to encourage healthy living, such as, connected scales or wearable heart monitors, are also a possibility with the IoT. ... Doctors can monitor the health of their patients on their smart phones after the patient gets discharged from the hospital."

While much of this current IoT technology is infringing on what used to be in the realm of science fiction, there is also a dark side to the IoT. Already hackers are breaking into Internet connected devices other than the traditional computers and data networks in order to illicitly control these IoT devices, alter or steal data and personal information, or shut them down on demand. In terms of connected medical devices, there have been some serious concerns expressed about complying with HIPAA and other privacy and security rules and regulations.

It has been well documented that some common household smart devices, most notably smart TVs, have actually spied on their owners. This was reported about two years ago in Forbes magazine by Joseph Steinberg, in his expose' "These Devices May Be Spying On You (Even In Your Own Home)" On January 27, 2014, this article in Forbes said, Televisions may track what you watch. Some LG televisions were found to spy on not only what channels were being watched, but even transmitted back to LG the names of files on USB drives connected to the television. Hackers have also demonstrated that they can hack some models of Samsung TVs and use them as vehicles to capture data from networks to which they are attached, and even watch whatever the cameras built in to the televisions see." Internet connected coffee makers, which can be remotely programmed to make morning coffee may disclose to hackers when you may be waking up, and even what time you might be returning home, valuable information for residential burglars. The smart

refrigerator may be selling your shopping information to third parties. In an unexpected and unusual case, Joseph Steinberg reported that a smart refrigerator was used to send out spam emails, " … (P)otential vulnerabilities have been reported in smart kitchen devices for quite some time, and less than a month ago a smart refrigerator was found to have been used by hackers in a malicious email attack. You read that correctly – hackers successfully used a refrigerator to send out malicious emails." Also in that Forbes article, companies providing DVR, satellite, and cable service have been alleged to have sold information of shows and other content watched in the household in order for advertisers to better target their advertising. It is

who controlled her laptop's integral webcam, " … and photographed her naked when she thought the camera was not on." The images of home security cameras, often transmitted unencrypted over the Internet, can be captured by burglars, informing them that not just is the home currently unoccupied, but also the location of the potentially incriminating cameras!

Information about specific items connected to the Internet is readily available, and even searchable as easily as any other Internet data. The Shanghai based website Shodan (shodan.io) describes itself as, "Shodan is the world's first search engine for Internet-connected devices." On the front page of Shodan is a self aggrandizing statement that says, "Explore the Internet of Things. Use Shodan to discover which

also widely known that many Internet service providers compile lists of websites visited; since many people get their TV and Internet from the same provider, these companies could combine that information, which Forbes warns, "a single party may know a lot more about you then you might think."

Another popular target for hackers and other miscreants is common household video capture equipment, such as a webcam or a home security camera; remote baby monitors are similarly targeted. Forbes disclosed that malware on a computer can remotely turn on and off the Internet connected cameras. In one notable case referenced in the Forbes article was how a Miss Teen USA was allegedly blackmailed by a hacker

of your devices are connected to the Internet, where they are located and who is using them.", followed by, "See the Big Picture - Websites are just one part of the Internet. There are power plants, Smart TVs, refrigerators and much more that can be found with Shodan!" Just as an experiment, I registered on Shodan with a disposable email address, and did a quick search of my neighborhood; I found nine potentially vulnerable IoT connected devices within a small radius of my house. I also found that some local service stations monitor their gasoline inventory in real time, transmitting their data in real time over an unencrypted Internet connection. For example, when searched, one particular major

refiner branded station reported, "IN-TANK INVENTORY Regular 7263 (gallons), Temperature 51.74 degrees" as well as other inventory information. This was one of 45 "Automated Tank Gauges" reported by Shodan in this area. This gasoline tank information was just a very small snippet of the millions of such Internet connected devices that most of us have no idea even exists.

In a December 28, 2015 article published by CNET, "Internet-connected homes open the door to hackers", with the subtitle, "Baby monitors, thermostats, kitchen gadgets and other "smart" devices add convenience to our daily lives. What are manufacturers doing to make sure they don't make life easier for criminals too?", the author, Laura Hautala, explained the vulnerabilities of our household IoT. In the opening of the article, employees of a Sunnyvale, California cybersecurity company, Fortinet, used the Shodan search engine to find a video stream in Saudi Arabia, 8100 miles away. Using the too common factory default username and password of "admin", they were able to view the streaming video. According to Fortinet engineer, Aamir Lakhani, the Shodan search engine can display, " … a huge trove of Internet-connected devices, from baby monitors to cars, cameras and even traffic lights." Sadly, many of these devices still use factory default usernames and passwords, and transmit their data over unencrypted Internet links. The CNET article goes on to state, " Billions of sensors will soon be built into appliances, security systems, health monitors, door locks, cars and city streets to help manage energy use, control traffic, monitor air quality and even warn physicians when a patient is about to have a stroke."

The CNET article stated that a well respected market forecaster, Gartner, predicted that in 2016 there will be 6.4 billion Internet connected devices in use. Many new IoT devices will be displayed and demonstrated at this year's CES in Las Vegas. Among some of the risks of an insecure IoT could be a variety of malicious vandalism, as well as outright identity theft, terrorism, and crimes of opportunity. Tanuj Mohan, co-founder of Enlighted, gave one such potential example of vandalism. He was quoted in CNET as saying, "That connected coffee maker in the office – it wouldn't be much of a stretch for a hacker to put it into a continuous loop and brew coffee throughout the weekend, flooding the office. … When computers hold the reins, criminals can grab control in unexpected ways." At present, there is no coordination or uniform standard for IoT security, and many manufactures of IoT devices do not incorporate adequate default security into their devices, making the aggregate vulnerability of the devices potentially catastrophic. Mohan warned that manufacturers are not paying attention to the potential security vulnerabilities of many of their products. "They're not yet aware of how everything they build can be exploited. Safety last."
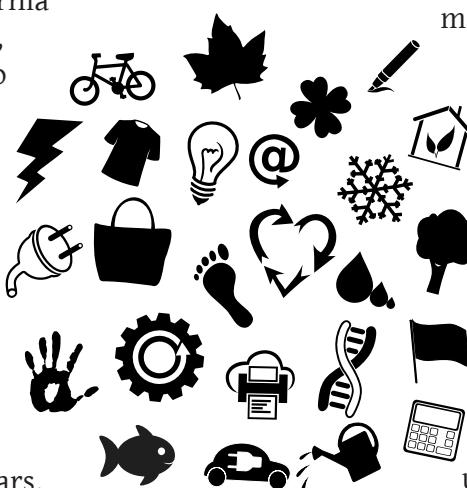
We, as users of IoT products need to take some personal responsibility for the use of our connected products. We should never use any default usernames and passwords such as the "admin" used to give total access to video link mentioned above, but instead use difficult to guess passwords. Since many of the devices offer some form of encryption as an optional setting, it would be wise for all users to engage that option, and set a complex pass phrase for a decryption key.

The CNET article closes with a very prophetic statement. "Baby monitors, thermostats, kitchen gadgets and other "smart" devices add convenience to our daily lives. What are manufacturers doing to make sure they don't make life easier for criminals too?"

Help Wanted: Meeting Speakers

Finding presenters for our meeting programs is difficult—your help in the effort to enhance the value we all receive from PATACS membership would be greatly appreciated!

Please consider speaking to your friends at an Arlington or Fairfax meeting. We'd love to feature your take on a smart phone or tablet app. A presentation on these or other topics of interest to you would undoubtedly be welcomed by your PATACS colleagues. We have space in our schedule for 15, 30, 60 and 75 minute discussions—what are you waiting for?

We also have ready-made paragraphs you could use in e-mail communications to help us find speakers. Contact: director2(at)patacs.org

Shopping on Amazon.com? Don't Forget PATACS!

If you shop online at Amazon.com, don't forget to start each session by clicking the Amazon link on the PATACS home page, then continue shopping on Amazon as usual. Doing so earns PATACS a 4 to 6.5% commission on your purchase at no additional cost to you.

Thank you for supporting your user group!

PATACS Email Discussion List

Join the PATACS members-only email list to discuss topics of mutual interest, ask and answer questions, share resources, convey news, and increase our sense of shared community with fellow members.

Visit https://groups.yahoo.com/neo/groups/PATACS-b/info for more information.

Special Membership Promotion

Current members who bring a new member to the organization will receive a six month extension of their membership. New member is defined as someone who has not

been a member in the thirty-six months prior to month of received application. The new member should list your name as the 'source' of their membership on the application form (pick up at meetings or download from http://patacs.org/membershippat.html).

APCUG Resources

The Association of Personal Computer User Groups (APCUG) is a worldwide organization that helps groups devoted to the world of technology including computers, tablets, smartphones, digital photography, genealogy, etc. by facilitating communications between member groups and industry vendors.

Winter Virtual Technology Conference (VTC)

APCUG's FREE 2016 Winter VTC will be held on Saturday, February 20, from 1:00 pm – 5:00 pm Eastern Standard Time. Enjoy learning about new technology from the comfort of your home!

To register for VTC, please click http://apcug-2016-winter.eventbrite.com/

Fall 2015 Virtual Technology Conference (VTC) Videos

You will find the YouTube videos at:

IOS 9 – The Good and the Bad, Jere Minich - https://youtu.be/_M427PLMc0o

E-mail Etiquette, Elliott Stern - https://youtu.be/JD6IvxFFG4Q

Save Hours per Day Keeping Up with Technology using RSS Feeds & Evernote, Hewie Poplock - https://youtu.be/1ir4KESrwAY

Using Wi-Fi Wireless Webcams to Spy on Something, Francis Chao - https://youtu.be/ez1F9ZJ3Fak

APCUG Reports, Q1 2016 Available

Information about the activities of APCUG and related opportunities including meeting ideas, fundraising information, region reports about member groups, and much more. http://apcug2.org/reports/

JCA SeniorTech Training

JCA SeniorTech Computer Centers offer diverse senior-friendly (50+) technology classes (personal computers, tablets, smartphones, online security, etc.). Offerings include beginner and intermediate computer classes in Windows 7, Windows 8, Excel, iPad and iPhone, email, photos, and social media.

SeniorTech is a service of the Jewish Council for the Aging (JCA). Within the limits of its resources, JCA serves people of all faiths and from all walks of life.

For additional information about SeniorTech courses, call 240-395-0916 or 703-652-1512. A course catalog is available for download at http://www.accessjca.org/programs/technology -training/.

Washington DC Area Training Locations

Asbury Methodist Village, 409 Russell Ave, Gaithersburg, MD, 301-987-6291

JCA Bronfman Center, 12320 Parklawn Drive, Rockville, MD, 301-255-4200

Microsoft at Westfield Montgomery Mall, 7101 Democracy Blvd, Bethesda, MD, 301-765-3080

Microsoft at Tysons Corner, 1961 Chain Bridge Rd, McLean, VA 22102, 703-336-8480

Crystal City Shops, 1750 Crystal Drive, Suite 1638B, Arlington, VA, 703-941-1007
http://va-seniortech.org/
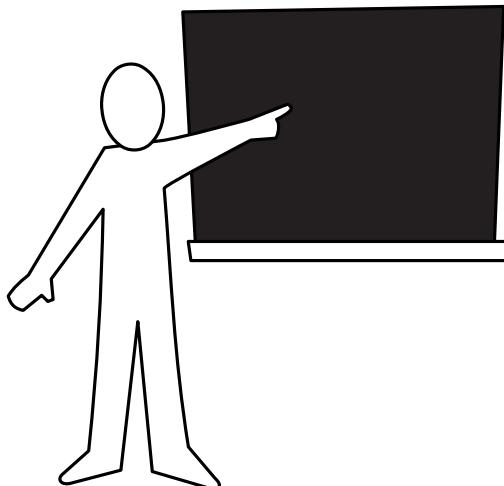
Micro Center® In Store Clinics

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Micro Center stores host free events called "In Store Clinics." The clinics cover a wide range of topics. All Micro Center store locations follow the same schedule of topics.

A link for store locations is at the top center of the home page, www.microcenter.com. For those in the Washington, D.C. area, the only store in Virginia is in the Pan Am Plaza at 3089 Nutley Street, Fairfax, VA 22031, phone (703) 204-8400, and the only store in Maryland is in the Federal Plaza at 1776 E. Jefferson #203, Rockville, MD 20852, phone (301) 692-2130.

Micro Center Clinics are held on most weekends, except during holidays. The same topic is usually presented on both Saturday and Sunday. Topics may change and clinics may be cancelled without notice. Please verify the schedule with the store before leaving and register online for e-mail updates (http://www.microcenter.com/site/ stores/instore-clinics.aspx).

Signing up in advance reserves a seat, recommended as space is limited. This can only be done at a store, either at the Tech Support or Customer Support area.

February-March 2016 Schedule

Feb 20 & 21: Wireless Networking

Feb 27 & 28: Mac OS-X Tips & Tricks

Mar 05 & 06: 3D Printers

Mar 12 & 13: Smartphones & Tablets

Mar 19 & 20: Windows® 10 Basics

PATACS Posts

President:..Jim Rhodes, 703-931-7854, president(at)patacs.org
1st Vice President:....................................... Ron Schmidt, 301-577-7899, director11(at)patacs.org
2nd Vice President, Membership Chair:.................... Mel Mikosinski, 703-978-9158, director4(at)patacs.org
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Publicity:... Henry Winokur, director5(at)patacs.org
Linux Support, Director:.. Geof Goodrum, 703-370-7649, linux(at)patacs.org
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Newsletter Editors:.. Geof Goodrum & Kathy Perrin, editor(at)patacs.org
Columnist:.. Lorrin Garson, newslettercolumnist(at)patacs.org

March 2016 PATACS Event Calendar

www.patacs.org | 703-370-7649

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	**2** 7-9pm Arlington General Meeting	**3**	**4**	**5** Genealogy Day
6	**7**	**8**	**9** 7-9pm Online Zoom Meeting	**10**	**11**	**12**
13 +1 Hour Begin Daylight Saving Time 2h ▶ 3h	**14** Pi Day	**15**	**16**	**17** St. Patrick's Day	**18**	**19** 12:30-3:30pm Fairfax General Meeting
20 Spring Equinox	**21** 7-9pm Arlington Board Meeting	**22**	**23** 7-9pm Arlington Technology & PC Help Desk	**24**	**25**	**26** May Newsletter Articles Due
27 Easter	**28**	**29**	**30**	**31**		

Arlington: Carlin Hall Community Center   Fairfax: Osher Lifelong Learning Institute
5711 4th Street South   4210 Roberts Road
Arlington VA 22204   Fairfax VA 22032