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The Rochester Computer Society, Inc.
a computer/tech club open to everyone

MONITOR

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Tues, Jan 9, 2018
6:30 pm, Help's Half Hour
7:00 pm, Main Meeting and Presentation

Tues, Feb 13, 'Your Smartphone is Like a Swiss Army Knife',
by Bill James, Computer Club of Oklahoma City

Tues, March 13, 'The Linux Software Store',
by John Kennedy ("Free-John"),
East-Central Ohio Technology Users Club

"Your Computer User Group of the Air", Saturdays from 12:00 pm to 2:00 pm with Nick Francesco, Dave Enright, and Steve Rae. Broadcasting on JAZZ 90.1 FM from Rochester, NY. Call 966-JAZZ (585-966-5299) or 800-790-0415

The RCSI '**Monitor**' newsletter can be found in most public libraries in Monroe County. *Free* copies can also be found in the following computer stores: Microworx, Just Solutions, TSC Electronics, and Pod Computers. Digital copies may be obtained from **www.rcsi.org** or my cloud storage at **http://tinyurl.com/tonydel-rcsi-newsletters/**.

Some Past Presentations:
Open Source and Free Software
Protecting Your Identity
Keeping Mobile Devices Secure
3D Printing, ENABLE project
Flash Drives-Not Just for Storage
Features, Mac OS X & Windows
Tablets, the Programs and Uses
Personal Finance Software
Amazing Browser Tips
Linux is Like Cars
Close up Photography

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In This Issue

Happy 60th birthday, Fortran

Fortran may be trending down on Google, but its foundational role in scientific applications ensures that it won't be retiring anytime soon.

By Ben Cotton

The Fortran compiler, introduced in April 1957, was the first optimizing compiler, and it paved the way for many technical computing applications over the years. What Cobol did for business computing, Fortran did for scientific computing.

Fortran may be approaching retirement age, but that doesn't mean it's about to stop working. This year marks the 60th anniversary of the first Fortran (then styled "FORTRAN," for "FORmula TRANslation") release.

Even if you can't write a single line of it, you use Fortran every day:

Special Interest Group

Linux Sig

The workshop is the **third Saturday of each month**, at Interlock Rochester, 1115 East Main St. www.interlockroc.org

Enter through door #7 on the end of building, near *Comics Etc* and Goodman St. Find 'Interlock' on the intercom directory to get buzzed in and go upstairs to suite #200. We have experts on hand to fix problems and answer questions about Linux and FOSS (free and open source software). Bring your system in so we can help you get the most out of it. Hope to see you there.

Free, online
Virtual Technology Conferences,
presented by APCUG

Check back, next month
for the 2018
conference dates

Operational weather forecast models are still largely written in Fortran, for example. Its focus on mathematical performance makes Fortran a common language in many high-performance computing applications, including computational fluid dynamics and computational chemistry. Although Fortran may not have the same popular appeal as newer languages, those languages owe much to the pioneering work of the Fortran development team.

Although Fortran may not have the same popular appeal as newer languages, those languages owe much to the pioneering work of the Fortran development team.

In the movie "Hidden Figures," one of the characters teaches herself Fortran because she sees that human computers (including herself) will be replaced by electronic computers. And although much from the early '60s has been left to history, Fortran persists. Two years ago, NASA began actively seeking a Fortran programmer to work on the Voyager missions as the last original programmer prepared to retire. Use of Fortran in weather and climate modeling, geophysics, and many other scientific applications means that Fortran knowledge will remain a valued skill for years to come.

Despite this, Fortran is trending down in searches, and it is no longer taught at some universities (I missed my chance to take my university's Fortran course by one semester). One atmospheric scientist, preparing to apply for graduate school in the late 2000s, decided she should learn a programming language. When she called local schools and universities to ask whether they offered any courses in Fortran, the response was laughter. So she taught herself, by studying existing code and doing a lot of Google searches. Today, she maintains old Fortran code and writes new code daily.

The trend of "Fortran" as a Google search term from 2004 to 2017

Such stories are becoming more prevalent as Fortran's popularity declines. The great longevity of Fortran provides a wealth of learning material as well as inter-generational bonding. In my first system administration job, a common task was helping graduate students compile Fortran code they inherited from their advisor (who in turn inherited it from *their* advisor, and so on...).

A colleague of mine, who coincidentally began existing in 1954 (the year of the first draft of *The IBM Mathematical Formula Translating System* specification), wrote an article sharing his experience creating a rendering of Da Vinci's "Mona Lisa" with Fortran. Another friend told me one of his favorite programs as an undergraduate was a Fortran program that created a calendar featuring ASCII-art renderings of the characters from the "Peanuts" comic strip.

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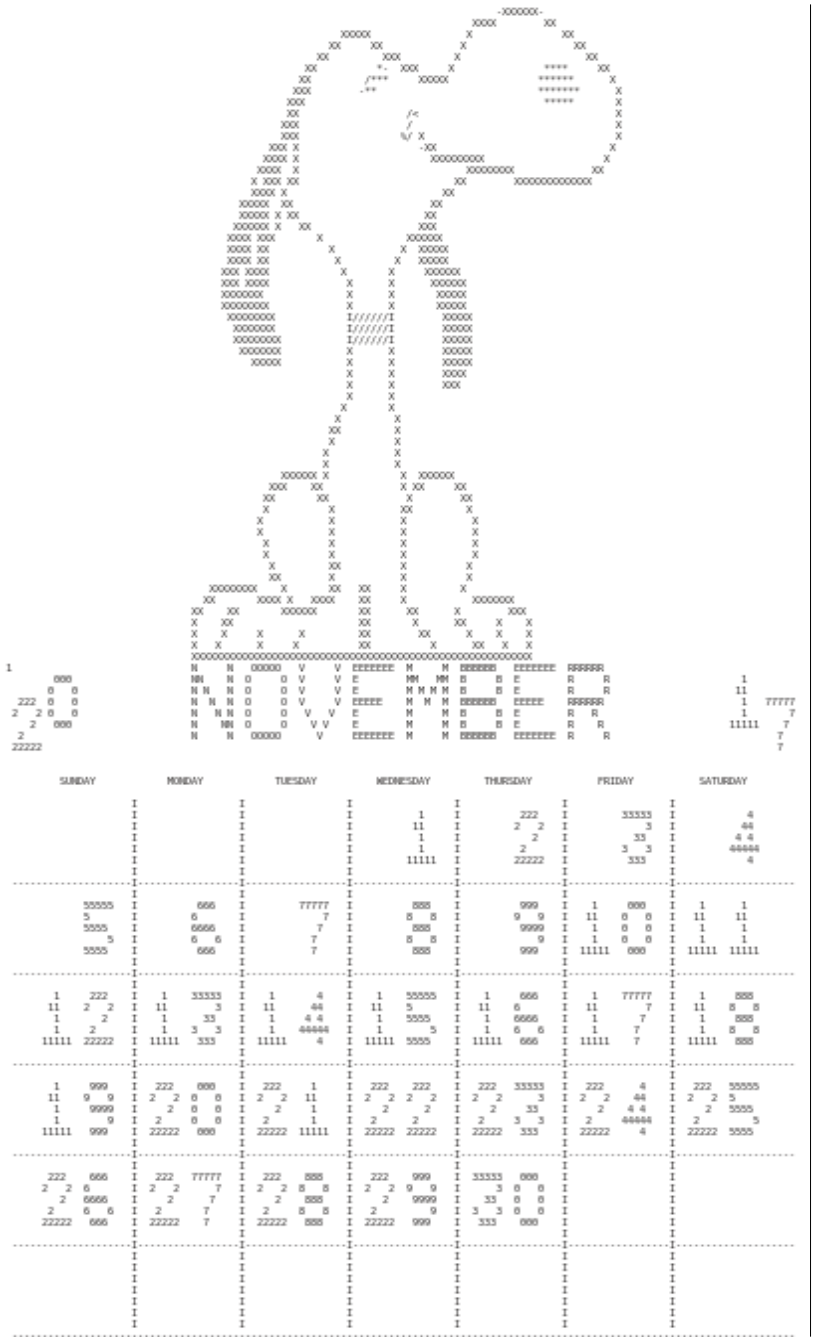
Planning Meeting

Held on 1st Tuesday of each month at 7 pm, at St. John's Meadows, Briarwood building.

Newsletter Printing

The newsletter was printed at St John's/Chestnut Court by the printing group, with the help of Don Wilder (computer and printer operator). *We will try and print on the 1st or 2nd* ***Thursday morning****, following the monthly meeting.*



A November 2017 calendar page generated by a Fortran program

What makes Fortran so enduring? Establishing an initial foothold helps, of course. When a language is used in a critical business application, that gives it a lot of staying power because wholly rewriting code is expensive and risky.

When a language is used in a critical business application, that gives it a lot of staying power because wholly rewriting code is expensive and risky.

But there's more to it than that. As the name implies, Fortran is designed to translate mathematical formulas into computer code. That explains its strong presence in fields that deal with a lot of mathematical formulas (particularly partial differential equations and the like).

And like any technology that has survived the years, Fortran has evolved. Changes in the language take advantage of new paradigms without making rapid changes. Since the first industry standard version of Fortran

(FORTRAN 66, approved in 1966), only a few major versions have occurred: FORTRAN 77 (approved in 1978), Fortran 90 (released in 1991 (ISO) and 1992 (ANSI)) and its update, Fortran 95, and Fortran 2003 (released in 2004) and its update, Fortran 2008. A new revision called Fortran 2015 is expected in mid-2018.

Clearly, there's no plan for Fortran to retire anytime soon. Active projects are underway to make it easier to run Fortran on GPUs. Will Fortran celebrate its centennial? Nobody knows. But we do know that the Voyager 1 and Voyager 2 spacecraft will carry Fortran code out beyond the reaches of our solar system.

Article reprinted by permission of the author and may be found on the opensource.com website (dated November 14, 2017). The actual article may be found at https://opensource.com/article/17/11/happy-60th-birthday-fortran.

Best 13 Sites Like Amazon for Online Shopping

from TechBoomers.com

Amazon has become one of the largest and most popular e-commerce websites in North America, if not the world. It has done so through a combination of good functionality and customer service, the ability to buy or sell for users, and a wide selection of products (including some exclusive to Amazon itself).

However, prices of items on Amazon can be expensive, especially when you factor in shipping charges and the fact that you can't haggle over them. And despite package tracking capabilities, it might still be a bit of a guessing game as to when your order will arrive (especially if you're ordering from another Amazon user, instead of the website itself).

If you're looking for a new online marketplace, here are thirteen other popular websites like Amazon, that you can try out.

1. eBay **(www.ebay.com)**

eBay is probably the most well-known Amazon alternative, and it started around the same time. Unlike Amazon, eBay doesn't sell its own products; it simply acts as a liaison between businesses or third-party sellers and people looking to buy. One of the unique things about eBay is that while many of the products listed on it can be outright bought, many others are put up for auction. The winner of an auction gets to buy the item at the price of the second-highest bid. For some products, you will even have a choice as to whether you want to buy them or bid for them.

2. Overstock **(www.overstock.com)**

Overstock is a website like Amazon that initially began as a seller of surplus goods from failed e-commerce websites; this often means you can get great deals while shopping on it. However, Overstock now sells new items as well, and has pretty good customer service to boot. Overstock also has a unique program called Worldstock, which sells hand-made crafts from artisans around the world and gives at least 60% of its revenue directly back to the artisans themselves.

Computer Recycling

Some Residential Drop off Locations: **Call first**, to find out what is accepted, especially for 'tube type' tvs or monitors.

Sunnking (we rule electronics recycling), 585-637-8365, 4 Owens Road, Brockport, **some other drop off locations:**

Mirecycle, 49 Stone Street, Rochester, 585-224-4040
Goodwill Industries of the Fingerlakes;
Rochester – 451 South Clinton Ave
1518 West Ridge Road
376 Jefferson Road
885 Long Pond Road
Webster – 1217 Bay Road
50 Webster Commons Blvd
Fairport – 1200 Fairport Road
7450 Pittsford-Palmyra Road
Victor – 2 Commerce Drive
Honeoye Falls – 201 West Main St
Macedon – 1635 North Wilson Rd
Brockport – 1807 Nathaniel Poole Trail

3. NewEgg **(www.newegg.com)**

NewEgg is another online marketplace like the others in this list, but it specializes in electronic goods such as desktop computers, laptops, televisions, digital cameras, and more. By focusing on rapid delivery and great customer service, NewEgg has grown to be a major Amazon competitor. With their price match guarantee and free "3 days or faster" shipping, you're bound to find a deal on NewEgg and have your new product in your hands quickly.

4. Zappos **(www.zappos.com)**

Zappos is a subsidiary website of Amazon that specializes in the sale of shoes, clothing, and accessories. You can earn Zappos rewards for each purchase you make, and you also have the option of getting expedited shipping in case you need your order fast. In many cases, you can even get free shipping and free returns. Zappos is also known for its customer service, as its representatives are encouraged to go above and beyond to make the online shopping experience the best it can be.

5. AliExpress **(www.aliexpress.com)**

Run by the Alibaba Group (they're actually Chinese, not Middle Eastern, though), AliExpress offers factory-direct pricing on a wide selection of items. They also have many guarantees and protections in place to keep buyers safe from scams. These include not releasing your money to a vendor until you receive and approve the item(s) you get, giving you a full refund if your order never arrives, and -- if the item you get isn't exactly what you were told you'd be getting -- allowing you to get a full refund (and you can decide whether to send back or keep your order!).

6. Jet.com **(www.jet.com)**

If you're looking for brand-name products from well-known sellers delivered right to your door for low costs, then Jet may be the replacement for Amazon that you've been looking for. The brainchild of a former Amazon employee, Jet allows you to order low-price stuff from famous brick-and-mortar outlets, get it within 2 days, and pay no shipping charges if your order is over $35. Plus, you can return items for free if they don't work out. Jet comes with a 3-month free trial, but costs $50 per year afterwards.

7. Barnes & Noble **(www.barnesandnoble.com)**

Barnes & Noble is similar to Amazon in many ways; it began primarily as a book seller, and has evolved to include many other items for sale as well. Barnes & Noble has over 6 million books in stock, most of which are ready to ship within 24 hours. It also has a stock of over 4.5 million eBooks available for download. You can also find textbooks, magazines, toys, games, collectibles, hobby equipment, and so much more for sale at Barnes & Noble. Moving the sale of books to the online marketplace helps cut down on overhead costs, so you can save some money by going to their website!

8. Rakuten **(www.rakuten.com)**

This alternative to Amazon was previously known as Buy.com, but it was purchased and renamed in 2010 by Japan's largest e-commerce company of the same name (The Rakuten Group, Inc.). Like eBay.com, Rakuten doesn't

have its own inventory of stuff, instead preferring to connect businesses with potential customers directly. It also has a few other notable features, such as video reviews of certain products, as well as a "Super Points" program that allows you to earn store credit for buying certain products and then use that credit to save money on future purchases.

9. Wal-Mart **(www.walmart.com)**

Wal-Mart is one of the largest companies in the world, but it's best known for its worldwide chain of supermarkets. The products sold at those stores can be purchased on the Walmart.com website, where they can be delivered straight to your door or picked up at a nearby outlet. Wal-Mart is famous for its low prices.

10. Target **(www.target.com)**

Target is another well-known supermarket chain in the United States, and its products can be ordered from its website at Target.com. From there, you can have the items delivered to you, or else pick them up at a nearby brick-and-mortar Target store. Though not as committed to discount selling as Wal-Mart, Target's products tend to be on the cutting edge of trends.

11. QVC.com **(www.qvc.com)**

Short for "Quality, Value, Convenience,"QVC is a worldwide television shopping network. However, it has also made the transition to the Internet era, and now allows the products that it features to be bought through its website. They're a bit pricey, but they come from high-end brand names and may be difficult to find anywhere else.

12. BestBuy.com **(www.bestbuy.com)**

BestBuy is an online marketplace for finding great deals on electronics, especially desktop computers, laptops, televisions, video games, and appliances. With BestBuy's lowest price guarantee and free shipping, your online experience should be seamless. You can also reserve items online when they are in stock, and then go and pick them up at your local BestBuy store! BestBuy also makes returning items much easier than with sites like Amazon or eBay; simply fill out the online form, and never worry about paying re-stocking fees!

13. Etsy **(www.etsy.com)**

Etsy is a bit of a different online marketplace, in that the items listed on it are rather specific. Most of its items are handmade accessories, clothing, jewellery, pieces of furniture, and so on. Other items are "vintage", being at least 20 years old, and are more or less difficult to find anywhere else. The creative things you'll find for sale on this website are great if you're looking to express yourself or spruce up your home decor, and they make great unique gifts, too!

Taken from the techboomers.com website and last updated in April of 2017.

Close Your Windows before You Leave on Vacation
or
Can Google-Powered Devices Eclipse Microsoft for Travel?

By Greg Skalka, President
Under the Computer Hood User Group, CA

I've used Microsoft Windows-based computers for probably 90% or more of my computing lifetime. While I've used Apple computers and tablets a bit, and currently use an Android smartphone and a Chromebook regularly, I am without a doubt more experienced with Windows (Win7 and XP) than any other operating system. If compared to languages, I'm somewhat multilingual, but my primary (if not native) language is Windows. That is why it was a difficult decision for me to choose to leave my Windows laptop behind on the week long trip I made with my wife to Nebraska to see the total solar eclipse on 8/21/17, and instead use my smartphone and Chromebook on our travels.

On almost every trip I've taken since I bought it on 2012, my Fujitsu Windows 7 laptop has been my traveling companion. From business trips to vacations to weekend getaways, this small, 14" laptop has taken care of all my computing needs while away from home. It has allowed me to connect to the Internet (through both wired Ethernet connections and Wi-Fi) for email and information from the web. It temporarily stored the hundreds of digital photos I'd take each day while on ten-day vacations in Hawaii on its hard drive. It aided me in navigation through stored and online maps. It stored electronic copies of our travel documents, camera manuals for reference and books, music and movies to keep me occupied while on the airplane. It even allowed me to write my newsletter column on the plane ride back home, to avoid missing our editor's submission deadlines. Before I had this laptop, my 14" XP laptop performed the same travel duties.

I have been using my 11.6" Acer Chromebook more and more over the last two years. I now use it to take notes at UCHUG board meetings and SCRUGS (Southern California Regional User Group Summit) meetings, as it is much lighter than my laptop and has longer battery life. Because it is so quick to boot up (typically under 15 seconds), it is what I grab to get a quick answer off the web when not sitting in front of my laptop (though I now have an Android smartphone and go to the web on it, I prefer the Chromebook's larger screen).

Two years ago, I even took my Chromebook on a Hawaii vacation along with my laptop; I was not brave enough to take the Chromebook alone. This eclipse trip was the first time it went instead of the laptop (it is also our first vacation since that Hawaii trip – I really need to get out more). I knew the Chromebook would be great for web access, as it boots so fast. It only has Wi-Fi, but few hotels have wired Ethernet available in their rooms these days anyway. Though the Chromebook can't run Thunderbird for email like my laptop, I can still get my Juno email through their web interface.

My main concern with the Chromebook is its lack of internal storage. To capture the entire eclipse experience, we would be taking four still cameras and four video cameras, all digital, on this trip. I could have just bought more extra SD memory cards to use in the cameras, but found I could use an external USB hard drive (2.5" type that gets all its power from the USB cable) as mass storage for photos and videos. The file manager in the Chrome OS does not use the familiar copy and paste; it is a little confusing to the Windows user in that dragging a file from one memory device to another copies it instead of moving it. I practiced on all the cameras before we left and wrote the process on a sticky note on the Chromebook, so I felt the photo storage process using the external USB drive would be OK.

It is funny how technology sometimes comes full circle. In the early days of digital photography, memory cards were small and rather expensive, so a few companies made external photo hard drives. These were small rotating platter drives with a built-in battery and memory card reader or USB OTG (On The Go) interface. You could connect your camera or memory card to one of these photo drives and it could copy off your photos without any other controlling device like a laptop. I still have a few of these photo drives, but their capacities now seem so small. Today memory cards are large and relatively inexpensive, but I still prefer to copy my photos off to a hard drive; I think it is easier to organize and deal with one hard drive than a bunch of memory cards.

Once we got on the plane to leave on vacation, I discovered the other main issue with the Chrome OS – its lack of support (drivers) for some file types and devices as compared to more the popular Windows. We flew on Southwest Airlines from San Diego to Omaha, through Las Vegas. On one of our flight legs, our plane was equipped with onboard Wi-Fi. Southwest provides some free TV shows and a flight tracker in addition to paid movies and an Internet connection ($8 per day) on their Wi-Fi-equipped planes (projected to be on all their fleet next year). I recall

watching the free TV the last time I flew; unfortunately, the streaming video format they use is not supported by the Chrome OS. It does not appear I could have used the paid Internet service either, as it only listed Windows, iOS and Android for supported devices. At least I could use the flight tracker on my Chromebook. I tried to watch the inflight free TV on my Android smartphone, but it required a Southwest video app that I would have had to have downloaded from the Google Play store before I boarded the plane.

Once at our destination, the Chromebook proved its worth by providing good and quick Internet access at our hotels and copying photos and videos from cameras to the external USB hard drive as needed. Copying whole folders of photo JPEG files worked fine; although there were a lot of files, they were not too large. The video files I was copying were up to 1 GB each, which could take 5 minutes or so apiece, so I chose to copy each video file individually rather than as multiples. It seemed the Chromebook took longer to copy files than my Windows laptop did. Since the Chromebook's processor is not as fast or powerful this would not be surprising, but I'd need to do some testing at home to confirm this.

Viewing the photos and videos on the hard drive also brought out the Chromebook's limitations. It could display the JPEG photo files, but scrolling through them was slower than on my more powerful laptop. The Chromebook could view the AVI and MP4 video files from my dash cam and action cams produced pretty well, but the MTS files my digital camera creates in video mode could not be viewed at all. I downloaded an app called VLC from the Chrome OS store to view these .mts files, but the playback was very jerky. My digital video camcorder records in high definition AVCHD format, which the Chromebook cannot handle.

I usually receive around a hundred emails a day on my primary email account (Juno), but I could use the Chromebook to tame my email while on travel. I used the Juno web mail interface about once a day to delete all but the most essential emails, so that I could download them into Thunderbird on my laptop upon my return home. I could of course handle those emails that were critical from the web mail interface, but that proved to be necessary for only a few.

The real star of the traveling tech show proved to be my smartphone. I used it to communicate via texts most of the time, rather than emails. Through the camera app I had installed before we left, I was able to view the three Samsung web cameras in our house on the phone and feel confident everything back home was safe. Unfortunately, at this time the Chromebook does not support all Android apps, so my home web cams could not be viewed on the Chromebook. Google is supposed to be fixing Chrome to allow the use of all Android apps, which will be a big benefit; we Chromebook users are still waiting.

I also used my smartphone to run Google Maps for navigation, though as I feared this worked well only in the major cities. Out in the country (which is most of Nebraska), where there is limited cell coverage, new map data could not always be loaded by Google Maps and location searches could not be made. Fortunately, I also brought my Magellan auto GPS receiver, which contained map files to navigate anywhere in North America. Google Maps did provide much better navigation, traffic and point of interest searching where cell coverage was good, so we usually ran both the smartphone and Magellan GPS for navigation, using each as appropriate to the situation. In San Diego, we take for granted that we will have good cell coverage as we drive. In Nebraska, away from the major cities the cell coverage can be poor, even along the Interstate highway.

With all the cameras and tech tools we brought, we could have a great vacation and see the eclipse in totality for almost two and a half minutes, taking way more photos and videos than we probably needed. I'd seen partial solar eclipses before, but the totality we experienced was a wondrous thing. The next chance to see a total solar eclipse in the U.S. will be on April 8, 2024, less than seven years from now. It will be visible from Texas through the middle of the eastern U.S. and up to Maine. I'd like to see that one as well. With the way my Google devices worked on this trip, I'd definitely consider leaving Windows at home again. But a lot can change in the tech world in seven years. Who knows what kind of technology I'll have to take on my travels by then?

From the September issue, Drive Light, www.uchug.org, president@uchug.org.

November 2017: The fiftieth TOP500 list of the fastest supercomputers in the world has China overtaking the US in the total number of ranked systems by a margin of 202 to 143
https://www.top500.org/lists/2017/11/ (**@top500supercomp**)

Ask Leo !
By Leo Notenboom, https://askleo.com/
Making Technology Work For Everyone

Can I Leave a Laptop Running All the Time?

Leaving a laptop running all the time boils down to two things: your convenience and a decision.

//

My computer is in use most of the day. Will a laptop handle being on for so many hours every day?

The short answer is: yes, it'll handle it. Mine are typically on 24 hours a day, 7 days a week. The longer answer, however, is more complex. There are trade-offs to be made when deciding to leave your laptop running all the time.

It all comes down to battery life

The standard way to keep a laptop running at all times is to leave it plugged in … all the time. The battery never runs down, so the laptop never needs to shut down. But the problem is that the battery never runs down. In fact, the battery rarely dips below 99% of its charge. It's basically kept fully charged at all times. In and of itself, this isn't a problem. Your computer and your battery will continue to operate just fine. You may just find out that when you do take the laptop with you and run it on battery, 100% charge doesn't mean what it used to. By leaving your laptop plugged in all the time, you're making a decision to shorten the battery's life: both the amount of time it can run your computer when not plugged in, and its usable life before needing replacement.

All batteries die

I want to be clear: all batteries die. Eventually, they lose their ability to hold a charge, or as much of a charge, and they become less and less useful to power the laptop. On my oldest laptops, for example, the battery acts as nothing more than a glorified UPS, and can keep the machine running for only a few minutes.

How quickly a battery dies is a function of how it's treated. Ideal treatment for most is something along the lines of:

- Keep it ~80% charged if you can.
- Use it down to the 10% range.
- Use a charger that is matched specifically for the battery.
- Don't let it get too hot or too cold.

There is much controversy around the specifics of that list, so don't take it as gospel by any means. The specifics also vary dramatically based on the battery type, how it was built, and even the software that controls how it gets charged.

One thing most people agree on, though, is that keeping the battery 100% charged at all times is generally not ideal. *It's not disastrous*, and your battery generally won't die quickly — it'll just die somewhat more quickly than if you'd treated it differently. So, it remains a valid choice.

The pace of technology

I leave my laptops on 24×7 so as to keep them automatically updated and run backups and other scripts at night when they're not in use. It's a choice I make.

What I've found is that by the time I care about the battery life being too short, the laptop itself has generally fallen into disuse by virtue of having become "old technology" in comparison to newer machines. In other words, the battery's lifespan still exceeds the laptops' useful lifespan for me. In at lease one case, I was able to extend the life of one of my older laptops by replacing the battery before I loaned it to a friend with less extensive computing needs. As I said, it also varies dramatically based on the manufacturer. My MacBook's battery is lasting much longer than I expected, and is probably outliving the equivalent configuration in other machines.

It's up to you

My sense is that it's generally not something to spend a lot of time worrying about. Use the computer in a way that makes the most sense for your needs. For most people, that's either:

- Turn it on occasionally, long enough to do whatever, with occasionally lengthier times to allow it to update. Plug it in when it gets low.
- Turn it on in the morning, turn it off at night. Travel with it as needed. Plug it in when not travelling.

Or you can be like me, and leave it plugged in and running day and night, taking it for travel occasionally.

* * * * * End of Article

The benefits of interactive technology for your child and you

posted November 13, 2017, on www.brandpoint.com (BPT)

Interacting with your children is one of the best parts of being a parent and it's no surprise that many people report looking for toys this holiday season that incorporate interactive technology. Are you one of them? If you are, then you know you're looking for the kind of technology that involves you and engages, motivates, teaches, surprises and sparks the imagination of your child.

The benefits of this interaction are considerable.

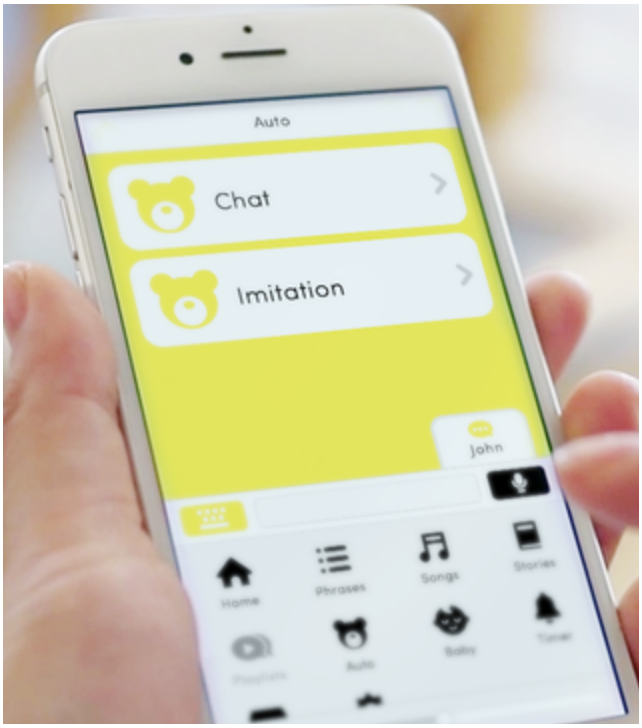
Interaction key to helping develop children's minds

Responsive interactions are the key to a toddler's ability to increase their vocabulary and a baby's ability to learn language, according to a study by the Society for Research in Child Development. Researchers at the University of Washington, Temple University and the University of Delaware studied 2-year-olds who effectively learned new verbs, either through training face-to-face with a person or via live video chat technology such as Skype. The study found children learned new words only when conversing with a person live or in the video chat, both of which involve responsive social interactions. These findings highlight the importance of a more interactive and responsive approach to learning language.

One creative, technology "toy" that's being introduced this year to support these findings is Chappet, a 2-inch, round yellow speaker button that's controlled by a smartphone app. Chappet allows parents or caregivers to interact with a child through a stuffed animal that adorns the button by supplying their own voice via voice or text chat. Chappet can also support

more than 1,000 prerecorded phrases, features 20 prerecorded songs and stories and its auto chat function can mimic the words a child shares with it in conversation, allowing children to interact with their toys in an entirely new way. "You can be in another room or right next to them on the couch," said Naoki Ono, Chappet Development Team Leader. "They won't know it's you unless you tell them because Chappet allows parents or loved ones to become the voice of the child's plush toy that involves fun, responsive, back-and-forth social and creative interactions. Children also will laugh aloud when they find out their best friend plush is mimicking them."

The Chappet speaker button can be sewn on or attached with a string to loop it around the stuffed animal's neck like a necklace. It does not need a battery since it is rechargeable, and because of its size, is safe for little children.



Learning more about new options to interact with your child

With a successful launch in Japan last year, Chappet is launching a project on Kickstarter to fund the development of the English version of the app and introduce Chappet to kids in the U.S. The campaign will last three weeks, ending Dec. 3. Visit www.Kickstarter.com and search for Chappet or click here where Chappet will be offered at up to 30 percent off retail price. Take the time to learn more about this and other interactive solutions available for your child this holiday season. Because, as the research shows, a little interaction can go a long, long way.

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* * * * * * * TECH CORNER * * * * * * *

Gearing up for the Internet of Things

By Greta Friar, MIT

Workshop brings together academia and industry to explore how to prepare next-generation wireless for machine-to-machine communication.

Telecommunications is gearing up for explosive growth of the Internet of Things (IoT), the massive collection of devices — smart watches, smart thermostats, traffic and energy monitors, etc. — that will be given network connectivity so that they can communicate and exchange data.

The big question raised by the IoT is capacity: How can a telecommunications network with limited spectrum serve thousands or millions of devices at once? Existing networks cannot support the addition of exponentially more devices, nor the near-instantaneous connection speed necessary for machine-to-machine communication. The next-generation network, 5G, must be designed to meet these requirements.

How to prepare global wireless networks for the IoT was the topic of discussion at the National Science Foundation Workshop on Low-Latency Wireless Random-Access, hosted by MIT's Laboratory for Information and Decision Systems (LIDS) and sponsored by the National Science Foundation (NSF) and the Center for the Science of Information (CSoI). The two-day event took place on the MIT campus in early November, and more than 20 speakers from MIT, other universities, and companies including Qualcomm, SigFox, and Huawei presented their work on how to solve the network challenges created by the IoT.

"Developing solutions for massive multi-access wireless communications is a fascinating, domain-spanning challenge for researchers with considerable practical applications," said MIT associate professor and LIDS faculty member Yury Polyanskiy, who organized the workshop.

The IoT will transform industries such as agriculture, transportation, utilities, athletics, and more by introducing smart devices and many networked monitors. The monitors will provide live environmental feedback, which the devices can use to optimize their functions. Determining 5G standards and protocols that will allow these transformative technological developments is a complex undertaking.

There are numerous hurdles to redesigning wireless infrastructure for the IoT. First, current networks are optimized for a relatively small set of users, mostly human, sending large amounts of data — a phone call, a video — in a continuous stream, with different connections centrally organized. To accommodate the IoT, networks will have to manage decentralized, intermittent transmission of many small data packets from many, many more users, mostly machines.

This vast increase in machines on the network will lead to more interference, which causes latency or loss of connectivity. Just like people have trouble getting a call through at a large event where there are too many other people on their phones, machines will have trouble sending their data if the network gets overloaded with devices needing connectivity. Devices that spend too much time searching for a working connection will also wear out their batteries, an issue for IoT monitors that are meant to be very low energy and low cost.

Another big challenge for the IoT is that it requires extremely low latency, or lag. As anyone who has used the Internet knows, data don't always transmit at the speed you want them to. And although a half-loaded video or delayed text may be a pain for humans, for machines even a few milliseconds of lag can have serious consequences. A smart car interpreting traffic data, for instance, cannot afford any lag. This is why the goal for 5G is an ambitious one millisecond latency between devices.

These issues were discussed at length during the workshop. Two sessions were dedicated to information theory, with academic speakers sharing their models for better massive machine-type communications. Sessions also covered topics including reliability and security.

“We don’t have one thing to solve, we have many things to solve,” said the first speaker of the event, Christophe Fourtet, co-founder and chief science officer of telecommunications company SigFox.

The workshop provided a somewhat rare opportunity for academia and industry to exchange ideas, as these communities are often siloed from each other.

“Academics played a major role in establishing early telecommunication standards, but this has become more rare recently. With 5G calling for radically new simple network-access methods, though, it’s a great opportunity for academics to play a big role again,” said Polyanskiy.

Presenter Swarun Kumar, assistant professor at Carnegie Mellon University and an MIT alumnus, echoed Polyanskiy’s sentiments. “The time from academic research to industry in this field is too slow,” Kumar said. He made an appeal to the members of industry present at the workshop to reach out to him and other academics, noting that they could solve problems more efficiently together. Kumar presented a local network that he and colleagues at Carnegie Mellon had implemented around the campus as a proof-of-concept for their innovations to network infrastructure.

After each set of presentations, speakers returned to the front of the room for a panel Q&A, and in between sessions, speakers and attendees had a chance to mingle and talk over refreshments. The event organizers affirmed that these moments were some of the most valuable of the workshop: a chance for everyone present to open up dialogue and, perhaps, plant the seeds of collaborations that will build a better network.

Editor's note: I didn't seek actual permission, but I reprinted this article from the MIT website | MIT Laboratory for Information and Decision Systems, November 22, 2017.

Robot Masseuse Treating Patients in Singapore

Emma, short for Expert Manipulative Massage Automation, specializes in back and knee massages. Emma 3.0, the first massage robot to go into public service, recently started work on her first patients at the NovaHealth Traditional Chinese Medicine clinic in Singapore.

By RT Staff October 24, 2017

A robot masseuse is now treating patients in Singapore. A robot named Emma (Expert Manipulative Massage Automation) uses an articulated robot arm with silicon massage tips to help the human massage therapists at the NovaHealth TCM clinic treat patients.

Developed by AiTreat, a start-up incubated by Nanyang Technological University, Singapore (NTU Singapore),

Emma massaging a patient autonomously while a physician treats another patient.
(Image Credit: Nanyang Technological University)

Emma specializes in back and knee massages. The silicon tips mimic the human palm and thumb that, according to NTU Singapore, provide "a massage that is described by patients as almost indistinguishable from a professional masseuse."

The robot also has a suite of sensors and diagnostics to measure the stiffness of a patient's particular muscle or tendon. The data collected for each patient is sent to the cloud where artificial intelligence (AI), the company says, computes the exact pressure to be delivered during the massage procedure. The AI can also analyze a patient's progress that enables physicians to measure a patient's recovery.

Emma is placed in a customized room that has two massage beds. Located in between both beds, Emma can massage one patient while the physician does other treatments like acupuncture or cupping for the second patient to, hopefully, maximize the clinic's productivity.

This is the third Emma robot developed, but it's the first to be used in the real world. The current model is a third more compact than the original version, plus it offers a wider range of massage programs.

Albert Zhang, founder of AiTreat and NovaHealth, led the development of Emma. He said Emma will address the manpower shortage and issues of consistency. "Emma is designed to deliver a clinically precise massage according to the prescription of a qualified TCM physician or physiotherapist, without the fatigue faced by a human therapist," said Zhang.

Emma could also open up low-cost treatment options in countries with an aging population and high healthcare costs. NTU Singapore said a conventional treatment package for lower back pain, consisting of a consultation, acupuncture and a 20-minute massage, would typically range from $60 to $150. Meanwhile at NovaHealth, according to NTU Singapore, a patient could get the same consultation, acupuncture but with a 40 minute massage done by Emma and human therapist, all for $68.

"By using Emma to do the labor-intensive massages, we can now offer a longer therapy session for patients while reducing the cost of treatment," said Zhang. "The human therapist is then free to focus on other areas such as the neck and limb joints which Emma can't massage at the moment."

Editor's note: this news has been reported in many publications around the world, but I chose this particular version found in http://www.roboticstrends.com.