Information Resources

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Seven sci-fi predictions about robots that came true: They are everywhere. In our homes, our bags and our pockets. Not the mechanical humanoid robots the science fiction author Isaac Asimov wrote about over 70 years ago, but the powerful AI of the silicon chips that are in everything from mobiles and laptops to fridges and cars and children's toys. And this is what Asimov was really driving out: the essence of robots is their brilliance and speed, their reliability and ability to outperform human beings on so many levels.When I reread I, Robot before writing the drama serial, I was really struck by how Asimov's predictions were coming true right now. It's not that he described specific bits of technology, it's that he foresaw the moral, emotional and intellectual dilemmas that AI and the robotics age are forcing humanity to grapple with. https://goo.gl/YDMoeI

Facebook artificial intelligence spots suicidal users: Facebook has begun using artificial intelligence to identify members that may be at risk of killing themselves. The social network has developed algorithms that spot warning signs in users' posts and the comments their friends leave in response. After confirmation by Facebook's human review team, the company contacts those thought to be at risk of self-harm to suggest ways they can seek help. A suicide helpline chief said the move was "not just helpful but critical". The tool is being tested only in the US at present. https://goo.gl/Ywdt6T

Ethics and Engineering: A Matter of Trust: In the December 2015 issue of IEEE Technology and Society Magazine (IEEE T&S), 2015-2016 Society on Social Implications of Technology (SSIT) President Greg Adamson discusses Improving Our 'Engineering-Crazed' Image. Adamson opens his message with a mention of the recent VW environmental deception debacle, and the rift that such events create between the engineering community and the general public. "In addition to the anticipated financial impact on the company," Adamson writes, "it is a setback to the credibility of technologists, one that brings ethics to the fore." Adamson insists that, in situations such as these, an engineer's primary loyalty should be to public interest, and not his or her employer. Below, Adamson expands upon his IEEE T&S article, and discusses in more depth his opinions on engineering and ethics. https://goo.gl/nl71gN

Cool Engineering Projects: Engineers are working to change life for the better in ways that we can hardly even imagine. Check out some of the cool ideas they are bringing to life. The Hyperloop—Travel Faster than a Jet?; Human Exoskeleton—Freedom from Wheelchairs; The Makani Energy Kite—Generating energy at 1,200 feet; The HoloLens—Say Goodbye to Computer Screens; and Solar Sunflowers—Powering a House Near You. https://goo.gl/rQruqi

10 breakthroughs that will greatly improve phone batteries: There's nothing worse than seeing your phone's battery percentage meter drop below 20 percent, and it usually only happens when you need it most. Batteries haven't seen much love in the last couple decades, especially compared to the tech they power, but that doesn't mean there's nothing new on the horizon. We've been talking about cool ways the battery and charging methods are gradually improving for a while. Here's a rundown of all the most exciting new developments, which may make that low battery warning less of an annoyance in the future. https://goo.gl/CZ5mzl

Your Guide to Building Great Apps: (whitepaper from Microsoft): Visual Studio 2015 helps you turn great ideas into great business applications. Our flexible cloud platform and enterprise-scale DevOps tools make it easier than ever to create scalable, state-of-the-art business applications for any platform—web, mobile, cloud, or on-premises. Create stunning apps for Windows, Android, iOS, and the web with the powerful integrated development environment of Visual Studio. Collaborate in the cloud with version control, agile, continuous delivery, and app analytics using any language, targeting any platform. https://goo.gl/OvdMwT

12 Algorithms Every Data Scientist Should Know: Algorithms have become part of our daily lives and they can be found in almost any aspect of business. Gartner calls this the algorithmic business and it is changing the way we (should) run and manage our organizations. There are all kinds of algorithms and for each aspect of your business, there are different algorithms, which nowadays you can even buy at an algorithm marketplace. Algoritmia provides developers with over 800 algorithms in the fields of audio and visual processing, machine learning and computer vision, saving developers precious time and money. However, the algorithms available on the Algoritmia marketplace might not be suitable for your particular need. After all, for different circumstances you require different algorithms and the same algorithm in a different environment can produce different results. In fact, there are many different variables that determine which algorithm to be used and how the algorithm will perform. These variables include the type and volume of the data, the industry the algorithm will be applied to, the application it will be used for etc. https://goo.gl/pT3d98

The 10 most popular Internet of Things applications right now: Needless to say that the current hype around the Internet of Things (IoT) is huge. It seems like every day a new company announces some IoT enabled product. And with it some (biased) prediction of where the market is going. Instead of making yet another biased prediction, we measured what the really popular Internet of Things applications are right now. And the analysis paints a pretty clear picture: Smart home stands out as the most prominent IoT application. https://goo.gl/9h44Jt

Guide to IoT Solution Development: This white paper uncovers major challenges during Internet of Things implementation projects. Find out key learnings from initial pilot projects along the 5 phases of IoT solution development, including a high-level comparison of major IoT solution vendors. The highlights of this guide available for free free download at https://goo.gl/btCZwB include:

• A comparison of 8 major IoT vendors along 15 components of an IoT solution.
• Key learnings from current IoT projects.
• 5 phases to structure your IoT solution development effort.
• 3 Deep dives on crucial IoT aspects: security, interconnectivity, and manageability.
• A detailed IoT case study highlighting the project approach and specific challenges.
• Cross-industry focus on Manufacturing, Energy, Retail and Healthcare but applicable to all IoT segments.

Resources for Teachers & Parents: There are a number of resources available to teachers to help expose students to power and energy engineering. Here are some of our favourites:

- TryEngineering.org — Lesson plans, games, educator resources, career counselor resources, outreach
- IEEE.org Educational Resources — Lesson plans, IEEE outreach volunteer training programs, community service programs, brochures, educator resources, outreach
- Engineering, Go For It - Lesson plans, engineering newsletter, educator resources, outreach
- IEEE eMeritBadges.org - Pre-University Educational Resources — Lesson plans
- IEEE PES Interactive Lessons and Applets — Interactive modules illustrating power use and the power grid
- Junior Engineering Technical Society — National engineering competition for pre-university students
- Get Into Energy — Career counselor resources and outreach resources
- Discover Engineering — Listing of international engineering competition and outreach events

Smart Cities White Papers: New white papers from IEEE Core Smart City Kansas City, Missouri, USA are now available for download. These papers are from the IEEE Smart Cities Kansas City Kickoff Workshop, held 8-9 February 2016 in Kansas City, MO, USA. https://goo.gl/rZjxF0

Scientists store movie and entire operating system on DNA: Columbia University scientists managed to store a full computer operating system and a short film among four other files on DNA molecules and were able to retrieve them error-free. Converting the files into genetic code to store them in the DNA, scientists said, a single gram of DNA could pack over 215 million GB of data for thousands of years. https://goo.gl/6kPtPb

How to become a Bug Bounty Hunter: Anyone with computer skills and high degree of curiosity can become a successful finder of vulnerabilities and get recognised as well as rewarded. You can be young or old when you start You need to keep learning continuously. https://goo.gl/GJoo6w

Governments and nation states are now officially training for cyberwarfare: An inside look: Europe, Canada, USA, Australia, and others are now running training exercises to prepare for the outbreak of cyberwar. Locked Shields is the largest simulation and we take you inside. https://goo.gl/ODJ5De

Watch out for these 8 workplace bully personality types: Workplace bullies have always been on the scene. But they're now being recognized as productivity killers and potential legal threats to employers. Some researchers claim one in every three employees will experience bullying at work. And the experts say bullying costs businesses more than $200 billion a year due to decreased productivity, increased absenteeism and high turnover. https://goo.gl/ffJtMj