

Information Resources



Compiled by

Mr. H.R. Mohan

Editor, IEEE India Info – The Newsletter of IEEE India Council
ICT Consultant & Former AVP (Systems), The Hindu, Chennai
hrmohan.ieee@gmail.com

Essential Software Developer Skills, Technologies & Languages for 2019: This article covers the biggies for technical languages, front-end and back-end (plus full-stack), app dev, machine learning, methodologies, and more. It's packed with all the best technologies to brush up on to get ahead in 2019. <https://goo.gl/XcaEXm>

The Public Relations (PR) Guide for Engineers: PR (public relations) can be an effective way to drive a lot of awareness around what you're building, and help your team increase signups, lift sales numbers, or generate interest from investors. And unlike ads you might pay for, PR is earned media, which is free, and can feel more authentic because it comes from an unbiased source. This is a tactical beginner's guide to PR for developers, meant to help you get started with your press outreach and PR strategy. <https://goo.gl/pXCrXZ>

Product Management for Engineers: Product managers or PMs are responsible for the overall product experience. They decide what to build, and — just as importantly — what not to. PMs and Heads of Product answer the question, "What problems are worth solving?" Whereas project managers answer, "Are we on track to deliver on time and on budget?" Translating the voice of the customer into prioritized product requirements requires PMs to wear many hats, and a core responsibility is that they ensure what's being built is what people actually need. This article deals with five key traits for what makes a good PM. <https://goo.gl/JP6XY8>

Marketing for Engineers: Marketing is "the exchange of goods and services aimed at satisfying the needs and wants of buyers and sellers." That's a business school way of saying it's marketing's responsibility to understand your customers' needs and wants, and to make sure they're heard by your team. We'll outline the marketing planning process and the basic language of marketing to help you better understand marketing's role in the product development process. <https://goo.gl/75M5ac>

Sales for Engineers: It doesn't matter if you're a junior developer or the Head of Sales — everyone on your team should know your sales pitch and be able to describe what you're building. For example: "PullRequest is code review as a service using a combination of automation tools and professional, on-demand reviewers to help development teams catch bugs and improve code quality." In one sentence, we describe our product (code review as a service), who it's for (development teams), and how they'll benefit (write vetted, high-quality code). Understanding how to craft your sales pitch will help you better describe your own projects, and make it easier to get buy-in. <https://goo.gl/KKBFrB>

How to Create a Programming Style Guide: A programming style guide is an opinionated guide of programming conventions, style, and best practices for a team or project. Some teams call it their coding guidelines, coding standards, or coding conventions. While these each have their own meaning in programming, they generally refer to the same thing. For this post, I'm referring to any set of guiding programming standards used by a team in hopes of making their code more consistent as a style guide. A team following a style guide helps everyone write code in a consistent way, and consistent code is easier to read and faster to update. Consistent code is easier to read and understand making it faster to add new features. <https://goo.gl/g6kX6N>

IoT's upcoming trends and business opportunities: Earlier what was called machine to machine was merely an idea and now IoT which is a giant network of connected things is no longer a nascent dream. McKinsey predicts the IoT market will be worth \$581B for ICT-based spend alone by 2020, growing at a Compound Annual Growth Rate (CAGR) between 7 and 15%. According to Statista, for 2020, the installed base of Internet of Things devices is forecast to grow to almost 31 billion worldwide. "The IoT will continue to deliver new opportunities for digital business innovation for the next decade, many of which will be enabled by new or improved technologies," said Nick Jones, research vice president at Gartner. Whether you are thinking of creating your own IoT startup or considering adding IoT applications to your business or just inquisitive, it is essential to know some of the key trends that will shape IoT in 2019. <https://goo.gl/yqQGvo>

10 Key Aspects To Consider When Managing Tech Projects: Nowadays there is a natural progression for senior software developers (either in startups or more corporate style companies) to make the jump from their current technical role to a more leadership/management oriented role. This progression is usually motivated by several needs which arise from the evolution of the company/team/product and require the senior dev to dedicate his time to training/onboarding, planning/road mapping and leading the team, contributing to more macro level decisions and coaching while becoming less and less involved in day-to-day engineering activities. The title of the job is not always “Manager”. It’s usually something along the lines of VP of Engineering or Tech/Team/Project Lead, which carries a different meaning from having Manager in your job title, even though it requires a lot of management activities. In this article, I’m going to introduce how and why the jump from a more technical oriented role to a more management oriented one happens and the issues it may carry along with it. I’ve drawn some inspiration from this lovely article from Charity Majors, you should definitely check it out. I’ll also go in depth on the challenges facing you when you make the jump. <https://goo.gl/tZ7S19>

Plagiarism Detection: Explore the latest articles, projects, and questions and answers in Plagiarism Detection, and find Plagiarism Detection experts. <https://goo.gl/fwDM4K>

Whitepaper on using electromechanical design to streamline the design process: Today’s products have become ultra-sophisticated cyber-physical systems. They have software, interconnected circuits and attached sensors, actuators and communications interfaces. Download this whitepaper to learn how working on an integrated platform with cross-domain technologies, common data backbones and shared libraries helps engineers make faster, more informed decisions; ultimately delivering better designs. <https://goo.gl/kk7rZN>

Amazon and Google can change how we use energy: Big tech—in this case, Amazon and Google—is starting to make its way into the energy industry on the backs of voice technology and in-home devices. Over the next few years, we’ll see the two companies help carve out a new landscape for residential energy management. For those familiar with Silicon Valley’s strategies, this might come as expected: enter an old industry, solve some of its inefficiencies, and dominate it. However, the energy industry is unique. Big tech’s story in energy—at the moment we’re in—won’t be about domination. Instead, it will help support the electric grid, teach us how to use electricity more efficiently, and even promote the use of renewable energy. <https://goo.gl/zPd6Xg>

Unbundling The Autonomous Vehicle: Autonomous vehicles rely on several advanced technologies to self-navigate. We unbundle the AV to see how these technologies work together and which companies are driving them forward. Autonomous vehicles rely on a set of complementary technologies to understand and respond to their surroundings. <https://goo.gl/M7foKo>

An Introduction to Dew Computing: Definition, Concept and Implications: Since the end of the 1990s, the world has witnessed a tremendous growth in the area of information and communication technology (ICT), starting with grid computing, cloud computing (CC), and fog computing to recently introduced edge computing. Although, these technologies are still in very good shape, they do heavily rely on connectivity, i.e., Internet. To address this challenge, this paper proposes a novel dew-cloud architecture that brings the power of CC together with the dew computing (DC). Originally, the dew-cloud architecture is an extension of the existing client-server architecture, where two servers are placed at both ends of the communication link. With the help of a dew server, a user has more control and flexibility to access his/her personal data in the absence of an Internet connection. Primarily, the data are stored at the dew server as a local copy upon which instantiation of the Internet is synchronized with the master copy at the cloud side. Users can browse, read, write, or append data on the local dew site, which is a local Web form of an actual website. With the incorporation of the dew domain naming system and dew domain name redirection, mapping between different local dew sites has become possible. Novel services, such as infrastructure-as-a-dew, software-as-a-dew service, and software-as-a-dew product, are, hereby, introduced along with the DC. This paper presents the following as key contributions: 1) a precise and concrete definition of DC; 2) detailed and comprehensive discussions of its concept and working principle; 3) application potentials; and 4) technical challenges. The motto of this paper is to conceptualize the fact of empowerment of the ICT-user base with almost an Internet-free surfing experience in coming days. <https://goo.gl/rPQx9A>

Cheat Sheets for AI, Neural Networks, Machine Learning, Deep Learning & Big Data: The Most Complete List of Best AI Cheat Sheets. Over the past few months, I have been collecting AI cheat sheets. From time to time I share them with friends and colleagues and recently I have been getting asked a lot, so I decided to organize and share the entire collection. To make things more interesting and give context, I added descriptions and/or excerpts for each major topic. This is the most complete list and the Big-O is at the very end, enjoy... <https://goo.gl/HVS6HN>

The Moral Machine experiment: With the rapid development of artificial intelligence have come concerns about how machines will make moral decisions, and the major challenge of quantifying societal expectations about the ethical principles that should guide machine behaviour. To address this challenge, we deployed the Moral Machine, an online experimental platform designed to explore the moral dilemmas faced by autonomous vehicles. This platform gathered 40 million decisions in ten languages from millions of people in 233 countries and territories. Here we describe the results of

this experiment. First, we summarize global moral preferences. Second, we document individual variations in preferences, based on respondents' demographics. Third, we report cross-cultural ethical variation, and uncover three major clusters of countries. Fourth, we show that these differences correlate with modern institutions and deep cultural traits. We discuss how these preferences can contribute to developing global, socially acceptable principles for machine ethics. All data used in this article are publicly available. <https://goo.gl/4qedSi>

Top Tech Trends In 2019: Technology is now central to every industry — from building construction to healthcare administration to food production. CB Insights looks at the top tech trends poised to reshape industries in 2019 in its 57 pages report. <https://goo.gl/b6cvX9>

Ministry Of Home Affairs Issues Handbook For Students/Adolescents On Cyber Safety: Recently, the Ministry of Home Affairs (MHA), Government of India, in consultation with Cyber Security experts prepared a 38 pages Handbook for Students/Adolescents on Cyber Safety. The Handbook aims at creating awareness among citizens, especially students, about various cyber threats that can impact them and ways to safeguard themselves against cybercrimes. <https://goo.gl/Er9iiR>

17 ways you should invest your time in your 20s for long-term success: Don't waste time, because that's "the stuff life is made of." It was good advice when Benjamin Franklin said it, and it's good advice now, no matter your age. But your 20s are a particularly crucial time in life. Many call these the "formative" years, and the habits you form now can carry you through the rest of your life. So what's the best way to spend this time? <https://goo.gl/Vig5W2>

10 Trends That Will Shape the Digital Workplace in 2019: The digitalization of the workplace is challenging businesses globally to adapt quickly to meet the needs of their talent and customers. While a simple solution is to update current business technology to the latest and greatest, business leaders quickly find that this is not a sustainable practice in the long run. The solution for most enterprises is to introduce a digital transformation strategy, which, in turn, is posing a direct threat to traditional business models and companies. Technologies such as social media, mobile applications, analytics, the cloud and the internet of things (IoT), have been successful in attracting and keeping talent and customers. But, it goes beyond changing technology — company culture needs to change. When we asked a number of C-Suite executives what they thought would be trending in the digital workplace over the coming year, 10 trends emerged, many of which had already been identified at the beginning of 2018 as disruptors. <https://goo.gl/T1VjH6>

The Top 10 Books of 2018 for Entrepreneurs: From the stacks of books received for review and picked up from overseas visits, here are some of the best titles of the year for startup founders, social entrepreneurs, innovators and changemakers! 2018 has been another outstanding year for books about entrepreneurship and innovation, with more of a focus on scaling approaches -- reflecting increased maturity of the startup ecosystem. See our earlier lists of 'Top 10 Books for Entrepreneurs' from the past six years as well: 2017, 2016, 2015, 2014, 2013 and 2012. <https://goo.gl/rs8j3e>

Favourite science news stories of 2018: Every year, Science publishes hundreds of news stories, both online and in our weekly magazine. And whereas many of these highlight huge advances in research (some of which get a nod in our breakthroughs of the year), a lot are simply cool stories that resonated with us, our readers, or both. And that's what this list focuses on—some of our coolest and most popular online news stories of the year. It's an eclectic mix, and you're sure to find at least a few you'll want to read—or read all over again. <https://goo.gl/cWKN1K> Video: 2018's Breakthrough of the Year and runners-up. <https://goo.gl/MTa5P5>

eBook: A "Quotable" Life: Mr. G. Sankar, a writer, speaker, and trainer on individual and organizational growth, who has been a resource person at the workshop on "Change Management" jointly organised by CSI & IEEE CS, IEEE PCS has come out with a book on quotations on the growth dimensions of health, wealth, education, relations, and spirituality. The book -- A "Quotable" Life is a book of 320 inspiring quotes and is available for free download. The author hopes it will serve as a daily dose of guidance, and blessing for all to enjoy life fully. Download it from <https://www.slideshare.net/sankarspeak/a-quotable-life>

190 universities just launched 600 free online courses: If you haven't heard, universities around the world are offering their courses online for free (or at least partially free). These courses are collectively called MOOCs or Massive Open Online Courses. In the past six years or so, over 800 universities have created more than 10,000 of these MOOCs. In the past four months alone, 190 universities have announced 600 such free online courses. I've compiled a list of them and categorized them according to the following subjects: Computer Science, Mathematics, Programming, Data Science, Humanities, Social Sciences, Education & Teaching, Health & Medicine, Business, Personal Development, Engineering, Art & Design, and finally Science. Many of these are completely self-paced, so you can start taking them at your convenience. <https://goo.gl/CPwrGo>

For more information resources and interesting reads, please <https://goo.gl/fWnCwy> for the archives of the blog pos of t Interesting Reads