Apart from the project titles listed in this document, student groups are also welcome to suggest your own titles to course instructor, before 4 Feb. However, be reminded that CUHK does not accept students submitting identical or very similar works to more than one courses unless explicit approval/ consent have been given by the all related course teachers.

Note that some of the very brief, some quoted from other sources, cases of simply a web link, or even unavailable descriptions given under each title are for your better understanding of the topic. It is to help you start thinking about the substance of your work. Your project description (the ~150-word summary) to be submitted in the group registration form should be your own work in your own word. That implies two things:

1) We accept more than one groups working on identical or similar topics; and

2) We expect each group to have your own interpretation and elaboration of the title.

If there is any enquiry, feel free discussing with us. Many of the topics are proposed by the tutors. Lecturers and tutors are more than happy to share with you and to help you gain more insight in some of the topics.

Once again, the project topic and description is to be submitted by 7 Feb as a Group Assignment via eLearn (can be submitted and edited by any member in a group.)

Here is the list of project titles available to CSCI3250 project groups:

Geopolitical and Social issues

What do you think about the PRISM program? Should government monitor peoples' lives due to anti-terrorist issue?

PRISM is a clandestine mass electronic surveillance data mining program known to have been operated by the United States National Security Agency (NSA) since 2007. The PRISM program collects stored Internet communications based on demands made to Internet companies such as Google Inc. and Apple Inc. under Section 702 of the FISA Amendments Act of 2008 to turn over any data that match court-approved search terms.

PRISM was publicly revealed when classified documents about the program were leaked to journalists of the Washington Post and the Guardian by Edward Snowden – at the time an NSA contractor – during a visit to Hong Kong. The leaked documents included 41 PowerPoint slides, four of which were published in news articles. The documents identified several technology companies as participants in the PRISM program, including Microsoft in 2007, Yahoo! in 2008, Google in 2009, Facebook in 2009, Paltalk in 2009, YouTube in 2010, AOL in 2011, Skype in 2011 and Apple in 2012.

What are your concerns about government's surveillance via computer technologies?

Ref [1]: PRISM (surveillance program) – Wikipedia.
https://en.wikipedia.org/wiki/PRISM_%28surveillance_program%29

What is Hong Kong's opportunity in science and technology development of mainland China?

Independent innovation is the development direction of China's science and technology, which does not only affect the country's long-term development, but also influence the economy and politics. Today, it is a hot topic on how to enhance the education, technology, and cultural exchange and communication between mainland China and Hong Kong.

How does the use of technology shape the thinking of Hong Kong's post-90's generation?

News on post-90's activists seems to be popping up in the news every other day. One thing that distinguishes the post-90's generation from their predecessors is their use of technology. Rather than relying on traditional media, they obtain and share information on the Internet. They express themselves in online forums and social networks. What is the role of technology in shaping the thinking of Hong Kong's post-90's generation?

Impact of the Internet on Authoritarian rule

Governments in authoritarian countries see the Internet as a big threat to their power. They frequently employ means to restrict Internet access of their citizens. How does the Internet shape the political climate in those countries?

Ref: http://www.hoover.org/publications/policy-review/article/5269

The digital divide and what can be done about it?

In a modern society, people who cannot afford to access the latest technology are hugely disadvantaged. While computer and Internet access is getting cheaper and cheaper, there are still significant some who cannot afford it even in a prosperous society such as Hong Kong. Furthermore, new technologies such as smart-phone and mobile data access are expensive for the average working class. What issues does it create? What can be done about it?

Ref: Digital divide – Wikipedia. http://en.wikipedia.org/wiki/Digital_divide

Does the Internet foster democracy and freedom of speech?

Internet greatly accelerates the propagation speed of news and the way people receive information. It also provides us with a platform to share our ideas more freely and conveniently. It let us think about some related questions as following: Who is controlling the Internet? Is there real democracy in the cyber world? How about the issues related to freedom of speech in the digital age?

Ref: http://en.wikipedia.org/wiki/Computer_ethics

Real vs. virtual world

Recently, there is a growing concern that our real world is losing all the details while the virtual world is gathering more life. More and more are activities are moving on internet. Like our social interactions (Facebook), sports (video games), entertainment etc. We need to understand the real difference between the two worlds? What are the implications of choosing one over the other? Is it crazy to choose virtual world? Is it really a choice?

Shrinking world

This is a study on human interactions, physical distance and social distance in the digital age. With the growth of internet, old boundaries of voice and data networks, distance and geography have been eased. What are the challenges and opportunities does it present? Or has it become uncomfortably small because of increased competition, information overload?

Ref:
https://www.solusource.com/tominfo/WhitePapers/Shrinking%20World%20Creates%20Logistics%20Challenges.pdf

Behavioral targeting

Behavioral targeting is used to target advertisements to consumers based on the preferences inferred from their online behavior. However, many online users and advocacy groups are concerned about privacy around this type of targeting.

Ref [1]: http://en.wikipedia.org/wiki/Behavioral_targeting

Ref [2]: http://behavioraltargeting.biz/internet-privacy-concerns-and-online-purchasing-behavior/

Ref [3]: http://en.wikipedia.org/wiki/FTC_regulation_of_behavioral_advertising

Internet Crime

Case study: Copyright infringement of software, music, movies with the rise of file sharing programs such as Napster, Kazaa, Foxy and BitTorrent

Copyright infringement is the use of works under copyright, infringing the copyright holder's exclusive rights, such as the right to reproduce, distribute, display or perform the copyrighted work, or to make derivative works, without permission from the copyright holder, which is typically a publisher or other business representing or assigned by the work's creator.

Ref[1]: http://en.wikipedia.org/wiki/Computer_ethics

Ref[2]: http://en.wikipedia.org/wiki/Copyright_infringement

Ref[3]: http://en.wikipedia.org/wiki/Napster

Is hacking (phishing attack, password stealing, etc.) cool? When and how does it become a matter of concern?

For example, phishing is the act of attempting to acquire information such as usernames, passwords, and credit card details (and sometimes, indirectly, money) by masquerading as a trustworthy entity in an electronic communication. Communications purporting to be from popular social web sites, auction sites, banks, online payment processors or IT administrators are commonly used to lure unsuspecting public. Phishing emails may contain links to websites that are infected with malware. Phishing is typically carried out by email spoofing or instant messaging and it often directs users to enter details at a fake website whose look and feel are almost identical to the legitimate one.

What are your concerns about these hacking behaviors? Who should be responsible for the property loss caused by phishing attack or password stealing?

New Technology

What are your concerns about wearing Google Glass? How do we deal with the fast blooming wearable computing devices?

Google Glass is a wearable computer with an optical head-mounted display (OHMD) that is being developed by Google in the Project Glass research and development project, with a mission of producing a mass-market ubiquitous computer.

Several facilities have banned the use of Google Glass before its release to the general public, citing concerns over potential privacy-violating capabilities. Other facilities, such as Las Vegas casinos, banned Google Glass, citing their desire to comply with Nevada state law and common gaming regulations which ban the use of recording devices near gambling areas. On 31 July 2013 it was reported that driving while wearing Google Glass is likely to be banned in the UK, being deemed careless driving, therefore a fixed penalty offense, following a decision by the Department for Transport.

Do you have any privacy or safety considerations about Google Glass or similar wearable computing devices?

Ref [1]: Google Glass. http://www.google.com/glass/

Ref [2]: Wearable computer – Wikipedia. https://en.wikipedia.org/wiki/Wearable_computer

Cloud storage: Convenient? Absolutely, but is it secure?

Cloud storage services like Dropbox are becoming more and more prevalent nowadays. It is reported that currently 25 million people spreading over 175 countries use Dropbox. On any given day, over 200 million files are saved in Dropbox. In addition to Dropbox, other similar services include Google Drive, SkyDrive, as well as Chinese-produced Baidu Cloud, Weiyun, etc.

These cloud storage services offer free storage space for new registrations. For example, Dropbox provide 2 GB Dropbox space for free, and its competing service like Weiyun offers 10T free space to attract users. All these services transform the way people create and share their life's work. Whether that's designing buildings, writing music, or raising a family, the cloud storage services make it effortless to have your files wherever you need them, on any computer or phone.

With the advent of cloud storage services, what are the issues and is it secure?

Ref: [1] Dropbox can be hacked, say security researchers. http://www.computerweekly.com/news/2240204366/Dropbox-can-be-hacked-say-security-researchers
[2] Dropbox: Convenient? Absolutely, but is it secure? http://www.techrepublic.com/blog/it-security/dropbox-convenient-absolutely-but-is-it-secure/

The time for Artificial Intelligence

After decades of failure, artificial intelligence is ready for the mass, owing to tectonic advances in computing power. Most new smart-phone applications will have to be voice-enabled rather than thumb-typed. Customers will insist on the capability to search, text, e-mail, schedule, collaborate, and purchase just by talking to their phones.

Will the Moore's Law meets the bottleneck?

Technology companies sometimes feel intense pressure as a result of Moore's Law. Although Moore's original proposal was merely an observation of market trends, some companies use it as a literal law, trying to double the capacity of their computer components every year. Major chip manufacturers, including Intel, tend to release new chips on a two year schedule, reflecting scientific development, consumer demand, and the pressure of Moore's Law. As Gordon Moore pointed out in 2005, chip development has to stop somewhere, and ultimately, technology companies will be limited on the atomic level, unable to go any smaller.

Will Moore's Law Ever Stop Working? That's really a dilemma.

The era of 3D: technologies, influences and opportunities

It seems, since the great success of Cameron's Avator, 3D movies have been more and more popular. The producers are attempting to create each every movie in 3D, not just sci-fi and animation ones. At the same time, 3D is associated with TV, LCD monitor, game consoles and so on. The era of 3D is coming. What key technologies support the big 3D business? How will our lives be influenced by 3D applications?

Ref [1]: 3D TV http://en.wikipedia.org/wiki/3D_television

Ref [2]: Nintendo 3DS: http://en.wikipedia.org/wiki/Nintendo_3DS

The impact of computer and video games on teenagers

The most widely used "positive" impact video games are said to have on children is that they may improve a player's dexterity and problem solving ability. But more argue that computer and video games make a bad influence on teenage violence and crime. Can we distinguish so called "good" and "bad" games? Should we set up a rating system towards computer and video games?

Ref [1]: The Impact of Video Games on Children.
http://www.pamf.org/preteen/parents/videogames.html

Ref [2]: Video game controversy. http://en.wikipedia.org/wiki/Video_game_censorship

How can technology improve education?

Advances in technology have allowed teachers to move beyond traditional methods of education. At one time, a student's only exposure to technology was found in a basic computer class. Now, technology has enabled the creation of various teaching and learning tools that can "demonstrate concepts, assign projects, and assess progress." What technologies have been used in class? Are these technologies effective in improving education? And are there any drawbacks with incorporating technology into education?

Ref: How Can Technology Improve Education: http://www.articlesbase.com/online-education-articles/how-can-technology-improve-education-3724769.html

When universal translator become reality

In the TV series Star Trek, the producers get around the problem of aliens talking to each other by inventing the universal translator, a device that translates spoken language on the fly. With Goggle implementing the "conversation mode" in their Google translate application, it looks like that such device will become a reality in the not too distant future. What will be the impact of this? Will it finally make the earth flat?

Ref: http://www.newscientist.com/blogs/shortsharpscience/2011/01/google-unveils-conversation-mo.html

Finally the end of paper?

An increasing number of electronic books are available on the Internet in recent years. People can easily get the electronic version of a book legally by paying much less than a paperback or a hardback. With the increasing popularity of networked tablet such as iPad and Kindle, is the end of paper finally drawing near? What will be the impact of this?

Ref[1]: http://en.wikipedia.org/wiki/E-book

Ref[2]: http://www.amazon.com/Kindle-Paperwhite-Ereader/dp/B00AWH595M

Economics and E-commerce

What is the role of computer technology in the development of bitcoin? Should bitcoin be free flowed or be prohibited by government?

Bitcoin is a peer-to-peer payment system and digital currency introduced as open source software in 2009 by pseudonymous developer Satoshi Nakamoto. It is a cryptocurrency, so-called because it uses cryptography to control the creation and transfer of money.

By November 23, 2013, the total market capitalization of all bitcoins in existence exceeded US$10 billion for the first time. On 5 December 2013, the People's Bank of China announced it was prohibiting Chinese financial institutions from using bitcoins. Following the introduction of these new rules, the value of bitcoin dropped and Chinese internet giant Baidu reversed its policy of accepting bitcoins for certain services. Starting in October 2013, Baidu had been allowing clients of website security services to pay with bitcoins. Buying real-world goods with any virtual currency has been illegal in China since at least 2009.

What do you think about the advantages and disadvantages of bitcoin? What should government do with it?

Ref: Bitcoin – Open source P2P money. http://bitcoin.org/

What are your concerns about taxi apps?

Taxi apps, such as GoGoTaxi, Easy Taxi, or "嘀嘀打車"，are emerging as a popular and convenient way to call a taxi service.

For example, by using Easy Taxi, you can just call a taxi by a single tap on your smartphone. You simply confirm your location, tap on "Call Taxi" and you are all set! You can track your taxi in real-time, so you know when your car is arriving. If you want to speak with him, tap on his phone number to connect. Also, the taxis are available 24-7.

The taxi apps are convenient. But do you have any privacy or safety considerations about taxi apps?

Ref [1]: Easy taxi. http://www.easytaxi.com/
Ref [2]: GoGoTaxi. http://gogotaxi.hk/
Ref [3]: 嘀嘀打車. http://www.xiaojukeji.com/ (Chinese only)

The Internet Finance/Online finance

China's e-commerce titan Alibaba moves in to disrupt China's personal finance industry with a new, online-only finance product aimed at the ordinary civilians. Giving China's prudent savers a higher interest rate than most banks' time deposit offerings, the new service has been explosively popular. With no marketing, Alibaba's Yuebao has today grown to 2.5 million users who have collectively deposited RMB 6.601 billion (HKD 8.472 billion) until July 1, 2013. Will this product affects banks' business? If it will, how? What do you think about the Internet finance?

Ref [1] http://www.techinasia.com/alibaba-yuebao-personal-finance-product/

Ref [2]: http://wiki.mbalib.com/zh-tw/%E4%BA%92%E8%81%94%E7%BD%91%E9%87%91%E8%9E%8D (Chinese only)

Ref [3]: https://financeprod.alipay.com/fund/index.htm (Chinese only)

Ref [4]: http://www.iresearchchina.com/views/4993.html

App Store: the present and the future

The first App Store was invented by Apple Inc on July 10, 2008, which allows users to browse, purchase and download applications for Apple's iOS devices. After the success of Apple's App Store, its competitors provide similar services, such as Nokia's Ovi Store and Google Play. Recently, Apple announced the Mac App Store which sales apps designed for Mac computers. Will the revolutionary change be a great opportunity for individual developers? And will it even help Apple's Mac OS outstrip Microsoft's Windows in the computer operating system territory?

Ref: App Store: http://en.wikipedia.org/wiki/Digital_distribution_platform

High-Frequency Trading errors, can we rely on the programming trading?

High-frequency trading is the execution of computerized trading strategies characterized by extremely short position-holding periods. In high-frequency trading, programs running on high-speed computers analyze market data, using algorithms to exploit profit making opportunities that may open up for only a fraction of a second to several hours. What are the risks?

Background and related example scenario: on 6 May 2010, at around 2:45 p.m. ET, P&G's (PG, Fortune 500) stock had fallen 10% to $56 on the New York Stock Exchange, triggering a "circuit breaker." At that point, other stock exchanges were allowed to report P&G's stock price on their own, instead of getting the price from NYSE.

According to the company and NYSE, the NASDAQ stock exchange misprinted a quote of $39.37 a share, even though the stock was really trading at $56.

Ref: http://money.cnn.com/2010/05/06/markets/procter_and_gamble_stock/index.htm?postversion=2010050619

The value and risk in B2B e-commerce, how to avoid B2B risk?

One reality confronting many corporate executives is that enterprise risk is not enterprise-centric but emanates from an extended enterprise and includes relationships with vendors, customers, and outsourcing providers. Indeed, in today's environment, internal auditors can no longer simply compete in an organization versus organization environment, but rather survival is dictated through successful supply chain competitiveness. Inevitably, these extended-enterprise

relationships are heavily dependent on information technology-based systems linked through increasingly tight business-to-business (B2B) e-commerce linkages.

The OpenRice site: competition, cooperation and opportunities in the future

OpenRice (Chinese: 開飯喇!) is a food and restaurant guide website which currently operates in Hong Kong, Macao, China, Singapore, Indonesia, the Philippines and Thailand. How will this website change people's life? If you are the CEO of OpenRice, what would you do to expand the market share and attract more users? On the other hand, how can other market competitors compete with it?

Ref [1]: http://en.wikipedia.org/wiki/OpenRice

Ref [2]: http://www.openrice.com/restaurant/index.htm

Electronic payment, Present and Future

With the rising interest in e-commerce, electronic payment techniques have exploded in number. The most popular way is payment by credit card, probably because of its simplicity. The user just enters the relevant numbers, then the merchant gets validation and proof that the payment has been made. For extra security, the communication between the user and the merchant should be encrypted.

As alternatives to credit cards, electronic coupons and more recently various kinds of e-wallet have gained in popularity. New developments such as digital cash and micro-payment systems are being developed and deployed.

Social Network
Snapchat

Snapchat is a photo messaging application developed by Evan Spiegel and Robert Murphy, then Stanford University students. Using the app, users can take photos, record videos, add text and drawings, and send them to a controlled list of recipients. These sent photographs and videos are known as "Snaps". Users set a time limit for how long recipients can view their Snaps (as of December 2013, the range is from 1 to 10 seconds), after which they will be hidden from the recipient's device and kept on Snapchat's servers forever. [1] Actually, Some apps in China use the same idea of Snapchat, but they didn't attract many users. What do you think are the reasons for this difference? What concerns do you have about these "burn after reading" apps?

Ref [1]: Snapchat – Wikipedia. http://en.wikipedia.org/wiki/Snapchat

Ref [2]: http://www.snapchat.com/

Ref [3]: http://www.al.com/living/index.ssf/2014/01/7_fun_ways_to_use_snapchat.html

How Twitter will change the way we live?

Most people, even its own founders, were skeptical that why did the world need it exactly if the new service named twitter just lets you send 140-character updates to your "followers". Twitter became famous because of its faster report and spread of breaking news than traditional news media, such as Mumbai terrorist attacks and the accident of US airplane landing into Hudson River. Similar microblogging services in China, or Weibo, also grow rapidly. How do twitter and other microbloggings change our lives? Will they cause any social issues?

Ref [1]: Twitter: http://en.wikipedia.org/wiki/Twitter

Ref [2]: Microblogging: http://en.wikipedia.org/wiki/microblogging

Social networking and professional development

Some study reported that 45% of employer screens job applicants by reading their Facebook and twitter profile. A woman sued her employer for firing her over a remark she has posted on Facebook. Is online social networking playing an increasingly important role in one's career? Is it a good idea to "friend" or "like" your boss? What is possibly in your supervisor's mind if he/ she "adds" you? What are the roles of social networking in building one's alumni and professional networks and in benefiting one's career?

Ref: http://oregonbusinessreport.com/2009/08/45-employers-use-facebook-twitter-to-screen-job-candidates/

Facebook privacy

It is not the first time that Facebook gets on the news for privacy issue. They have made user phone number and address available to apps developers. With Facebook becoming indispensable in our social life, many of us don't think twice about putting our personal information on Facebook. However, Facebook is after all a profit-making private company. Have we entrusted our personal information to the wrong hands? Does it shed any light on the old issue of handling personal data?

Ref: http://news.yahoo.com/facebook-privacy-settings-how-to-150256399.html

Media and Information

Will the "new media" replace traditional media?

People predicted that television would replace radio, and that books and newspapers would go extinct because of the invention of Internet. But these haven't happened yet. New media is growing day by day while traditional media is still ubiquitous. It seems the relation between new and old media is far more complicated. What are the characters and advantages of new media? What are the differences and interactions between new media and traditional media?

Ref [1] New Media: http://en.wikipedia.org/wiki/New_media

Accuracy of information in the Internet age.

Google ranks its search result by popularity rather than quality. Wikipedia allows anybody to add contents. Increasing people rely on informational that have not been checked for accuracy and quality, often written by amateurs. Does our quality of information suffer as the quantity increases? Does it make it easier for rumors and misinformation to spread? What are the consequences?