

ITU-TRCSL Training on ICTs for promoting Innovation & Entrepreneurship

Teaching Future Technologies

**12-15 September, 2017
Colombo, Sri Lanka**

Pete Argent , ITU Expert



Agenda

- Solving important problems
- Demystifying future tech for students
- Access to Open Source tools
- Case studies of communities
using future tech to solve challenges





Outcomes

- Be able to inspire your students to solve important problems
- Understand how you can use and teach new technology skills
- Have a plan to teach AI, Blockchain and IoT





Demystifying future tech

- Future Tech
- Workshops
- Demonstrations





The future is now!

- Future tech is happening now.
- Artificial intelligence is in the news every day
- IoT is making a big impact in business
- Blockchain is going to change the internet as we know it.





Artificial intelligence

- What is it?





Artificial intelligence

- What is it?

“when a machine mimics "cognitive" functions that humans associate with other human minds, such as "learning" and "problem solving".

“..any device that perceives its environment and takes actions that maximize its chance of success at some goal.” [Wikipedia: Artificial Intelligence](#)





Artificial intelligence

How can we use it now?

- Automation
- Data analysis
- Decision support
- Intelligent agents
- Problem solving





Artificial intelligence

Example for marketing automation.

Goal: automatically share **interesting** news articles about AI to my Twitter followers

1. Fetch AI news articles
2. Post news articles to Twitter
3. Collect data on 'shares' and 'clicks' and 'likes' for each post
4. Use an algorithm to judge the type of popular articles
5. Post more 'popular' articles





Artificial intelligence

You don't even need to create your own AI

There are AI-as-a-service offerings you can use now for free!





Artificial intelligence tools

- [x.ai](#)
- [BotEngine](#)
- [API.ai](#)
- [Clarifai](#)
- [TensorFlow](#)
- [WIT.ai](#)
- [H2O.ai](#)
- And many more.....!





Internet of Things

What is it?





Internet of Things

What is it?

- Connected devices
- Providing data and interface

- Smart homes/offices/environments





Internet of Things

- Tools:
- <https://thinger.io/>
- <https://devicehive.com/>
- <https://www.mainflux.com/>
- <http://www.openremote.com/>
- And many more...





Blockchain

- What is it?





Blockchain

- What is it?
- a blockchain can serve as "an open, distributed ledger that can record transactions between two parties efficiently and in a verifiable and permanent way."





Blockchain

- This makes blockchains potentially suitable for:
 - the recording of events,
 - medical records and
 - other records management activities, such as
 - identity management,
 - transaction processing,
 - documenting provenance, or
 - food traceability.





Blockchain services

- <https://www.openchain.org/>
- <https://www.hyperledger.org/>
- <https://www.multichain.com/>
- <https://monax.io/>
- <https://www.ethereum.org/>
- <https://www.bigchaindb.com/>





Future Tech Challenge

- With your partner, think of a way you could use an AI service, IoT or BlockChain to make one of these businesses better:
 - AirBNB
 - Uber
 - Aa

- 10 Minutes





Workshops & Demonstrations

- You can run (free or cheap) 1 - 2 hour workshops to demystify these technologies and inspire people to use them.
- Build an example of an application using these services to demonstrate or find a demo online





Maker Spaces

- If you have access to a maker space, IoT projects can be a fun way to involve the community
- A maker space could be sponsored by a company or government agency.





Case studies

- Communities solving important challenges with future tech





Artificial Intelligence and poverty

How Satellite Data And Artificial Intelligence Could Help Us Understand Poverty Better

New technology lets computers understand what they see in an image—or a million images.





IoT and public health

IoT solutions to help reduce human-elephant conflict in Sri Lanka

By [Asanka Sayakkara](#) on 12 Oct 2016

Categories: [Tech matters](#), [Events](#)

Tags: [APNIC 42](#), [Guest Post](#), [ISIF Asia](#), [IoT](#)

[2 Comments](#)



Human-elephant conflict is a very serious and destructive problem in rural Sri Lanka.

Each year, around 70 people are killed by elephants who wander into villages and farms in search of food; and nearly four times as many elephants are killed as a result. Elephants wandering into farmland also damage crops.





Blockchain and human rights



Bitcoin Used to Support Human Rights in Sri Lanka

Nov 22, 2013 at 18:30 UTC by Kadhim Shubber

News • Lifestyle



A human rights organisation that works in Sri Lanka is [now accepting bitcoin donations](#) to protect the identities of supporters.





IoT and environment



Innovation

IoT and the Environment: Making It Easier To Be Green



Maciej Kranz - November 30, 2016 - 0 Comments

To celebrate the launch last week of my book, [Building the Internet of Things](#), I am taking a short break from my current series on my "Recipe for IoT Success" to offer an excerpt from the book:

We are all aware of the environmental challenges facing both the developing and developed worlds. Polluted air in cities, lack of potable water, industrial waste, dirty and inefficient energy sources, to name a few. The good news is that the Internet of Things (IoT) is starting to help in many of these areas. Cities are deploying systems that monitor air quality and noise levels and can recommend actions as simple as regulating traffic and vehicle access to the city center. Governments and cities are installing tsunami, flood, earthquake, or wildfire warning systems. Select farmers from India, Sri Lanka, China, Kenya, South Africa, the United States, and Italy are already benefiting from smart irrigation systems that reduce water consumption, increase yields, and improve predictability of crops in the fields and in greenhouses. Several cities in California are using smart water meters to monitor and reduce water use by households during drought. We all know how much food is being wasted and spoiled during improper transportation and storage in both poor and rich countries. When entrepreneurs combine the power of IoT telematics and cloud-based systems with micro-payments and with modern supply chain best practices (replacing traditional and highly inefficient informal distribution networks), the resulting market structure transformation can dramatically reduce both spoilage and the cost of food to consumers.





Solving important problems

- Poverty or inequality
- Access to clean water
- Unemployment
- Food supply
- Public health
- Mental health
- Access to education
- Environment





Future Tech Challenge

- With your partner, think of a way you could use an AI service, IoT or BlockChain to solve a community challenge.
- Poverty or inequality
- Access to clean water
- Unemployment
- Food supply
- Public health
- Mental health
- Access to education
- Environment





I Thank U (ITU)

