Incorporating smart IoT agriculture systems into engineering curriculum

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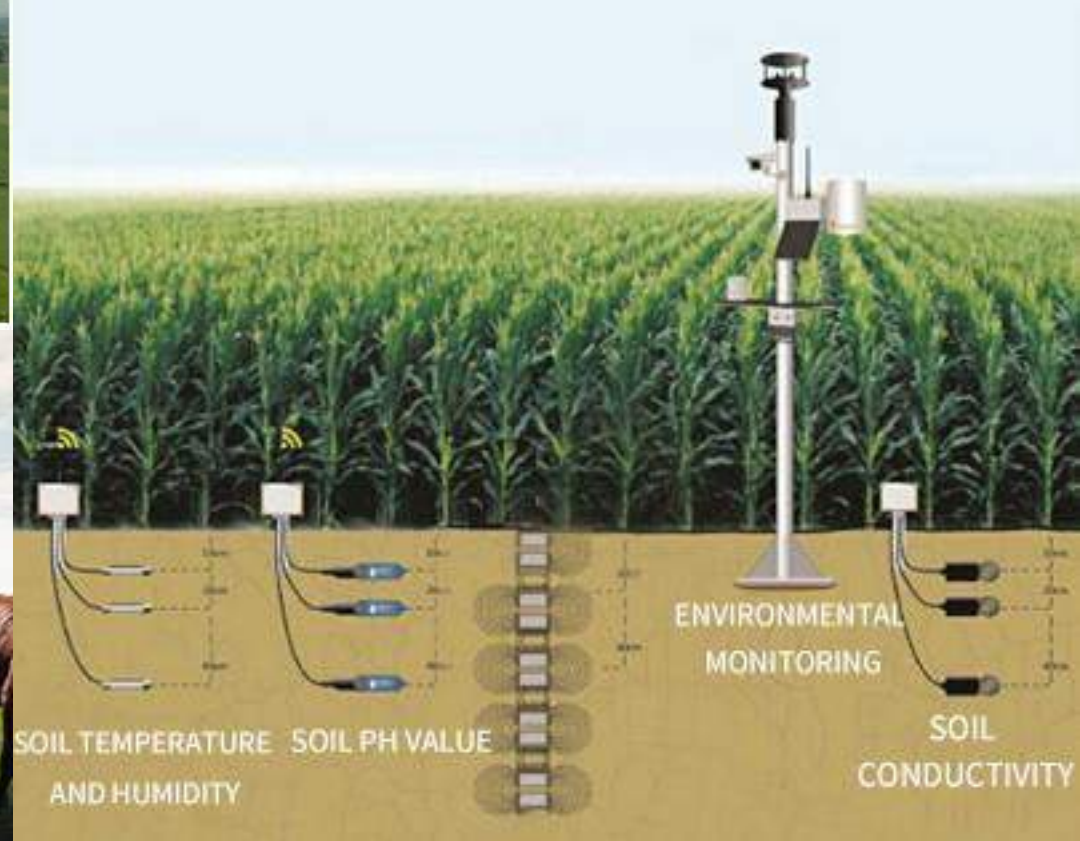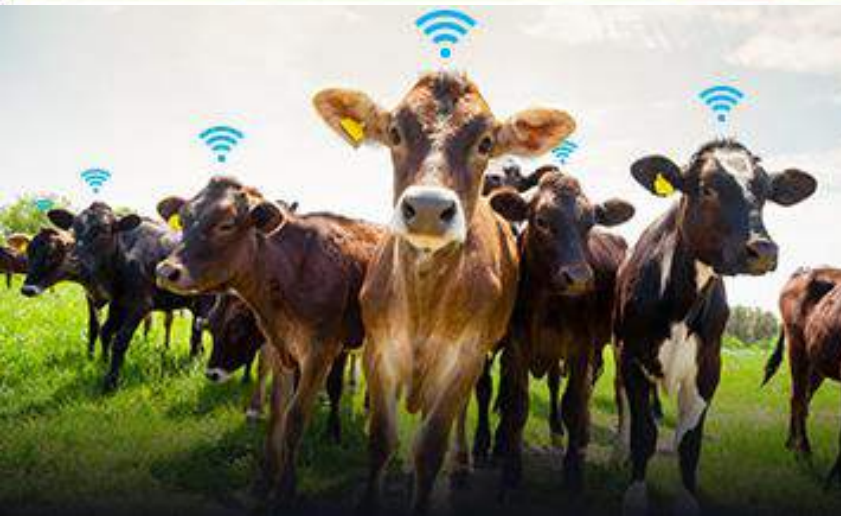IoT and GIS in Agriculture, Tuzla, 29th of September, 2020

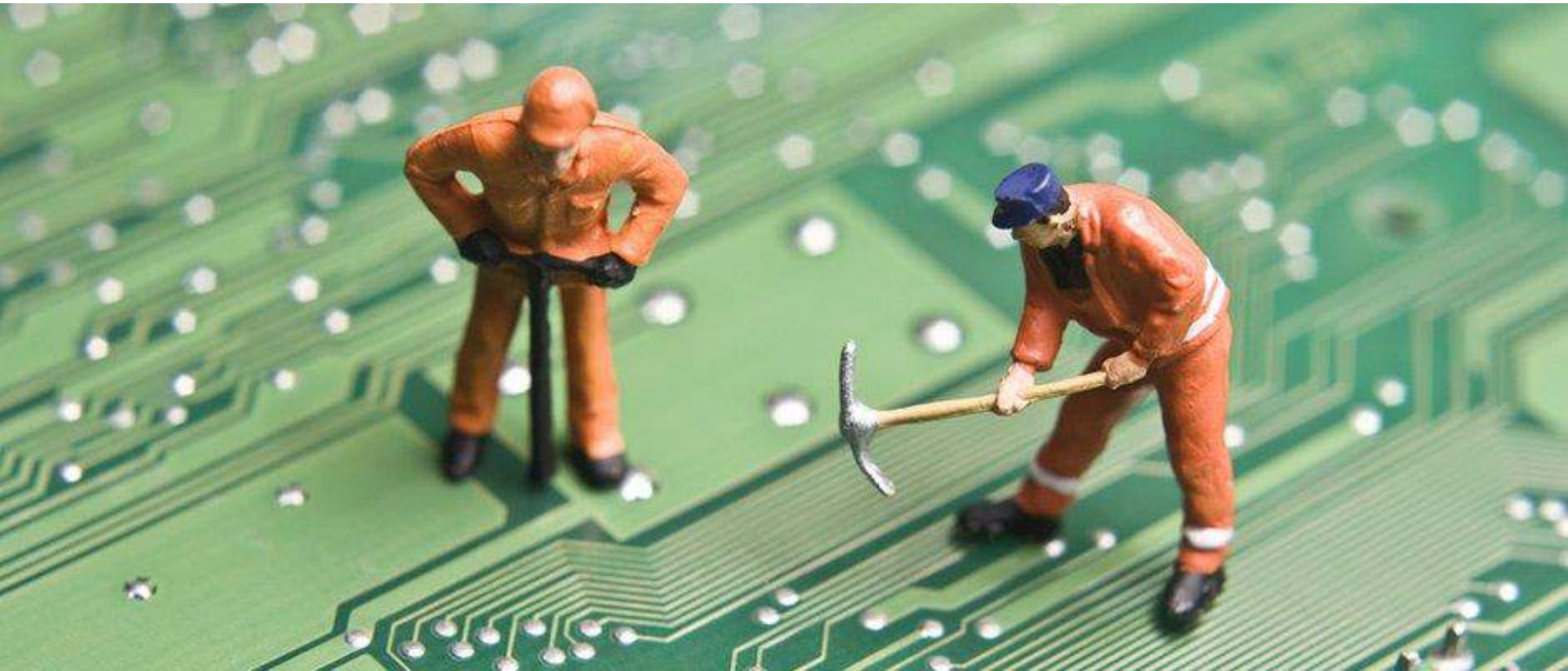# What do we need from smart agriculture IoT engineer?

Vehicles

Sensors

Drones

SMART AGRICULTURE IoT ENGINEER

Courses available in Telecommunications curriculum

Digital signal processing

Wireless Sensor networks

Smart Devices and Communications

Internet of Things (IoT)

Microprocessor Systems in Telecommunications

Artificial Intelligence and Machine Learning Systems

Desired learning outcomes

1. Select and perform electrical/ electronic measurement of meters and instruments

2. Test various electronic components using proper measuring instruments and compare the data using standard parameter.

3. Identify and select various types of sensors used in Smart Agriculture.

4. Position the appropriate sensors and collect the information required in Smart Agriculture.

5. Identify, select different wireless communication modules and topology to generate and record the data.

6. Identify and test Wired & Wireless communication medium such as RS232, RS485, Ethernet, Fiber Optic, Wi-Fi, GSM, GPRS, RF etc. and communication protocols.

Desired learning outcomes

7. Identify Solar Panel Basics Testing, Characteristics, Charge Controller Circuit.

8. . Perform installation, configuration and Check working of IOT devices, network, database, app and web services.

9. Establish and troubleshoot IoT connectivity of devices to cloud having multiple communication medium, protocols and networking topology and device management and monitoring.

10. Demonstrate and deploy responsive Web Application using APIs and generate reports using templates.

Equipment for Internet of Things Laboratory through VIRAL

Equipment for Internet of Things Laboratory
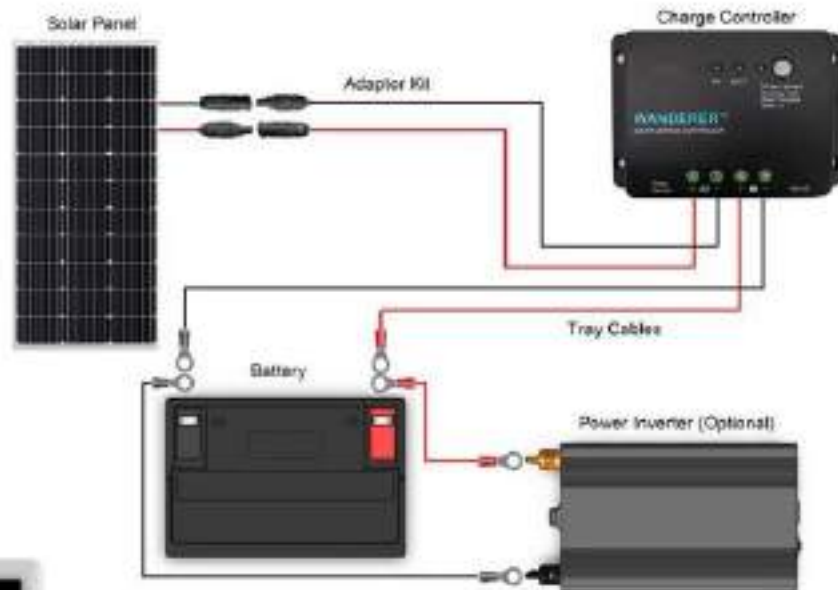
Challenges for IoT in Agriculture – potential research studies

1. Poor Internet Connectivity in Farms
2. High Hardware Costs
3. Disrupted Connectivity to the Cloud
4. Scalability
5. Interoperability
6. Localization

VIRAL

How to engage students?

- Hackathons
  - provide opportunities for knowledge and skills applicability primarily for students in IT and agriculture
  - increase the interest for future students' enrolment
  - exploring the role of entrepreneurship for students, exploring ways of cultivating academic spin-offs

- Bachelor and master thesis
- Research papers

Our students

CERTIFICATE

THIS CERTIFICATE IS PROUDLY PRESENTED TO

RECOGNITION OF STUDENTS STRESS LEVELS WITH WEARABLE SENSORS

Amir Hasanbašić, Mustafa Spahić, Dino Bošnjić,
Haris Hodžić, Vedad Mešić, Omar Jahić

NAGRADA ZA NAJBOLJE OCIJENJENI RAD
OD STRANE RECENZENATA
AWARD FOR THE BEST PAPER
RATED BY REVIEWERS

INOVACIJE

Ekipa iz Tuzle i njihov novi protupožarni sistem ušli u finale NASA-inog takmičenja

Pčelarska GSM vaga
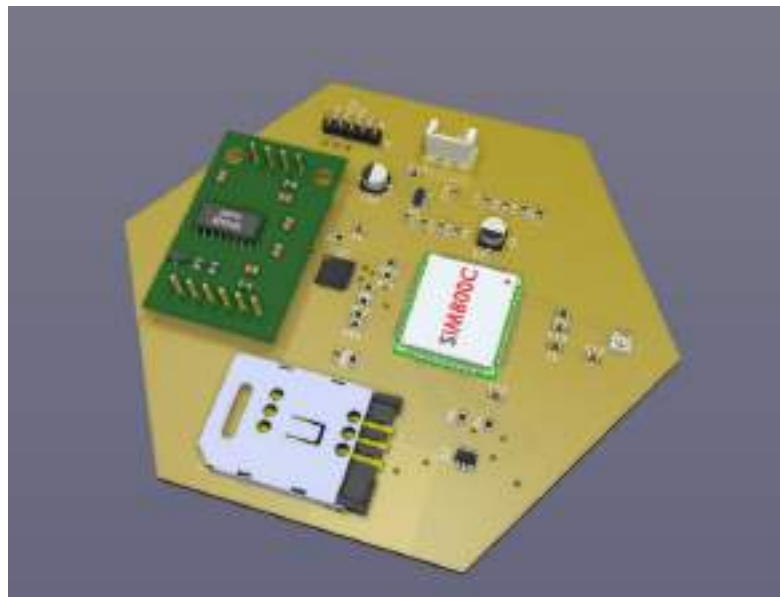
Hvala na pažnji!

VITALISING ICT RELEVANCE IN AGRICULTURAL LEARNING