



INTERNET OF THINGS

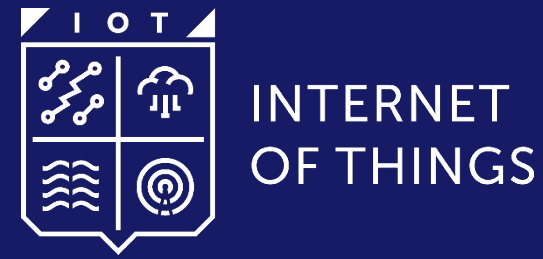
Education. Experience. Innovation

pH.D. Zenoviy Veres
Solution Architect
Assistant Professor @ NULP

Pooling

<http://etc.ch/zpCD>





IoT @ NULP

Specialty: Computer Science & Information Technology

Educational program: System engineering (Internet of things)

Department: Computer systems of automation

734 Application forms received

56 students

18 students received government funding

3 students received scholarships from

Lviv IT Cluster & Cypress

41:1 competition for government funding

Lviv IT Cluster



We united

8000+

IT EXPERTS
EVERY

2

IT EMPLOYEE IN LVIV IS A MEMBER OF LVIV IT CLUSTER

45

COMPANIES
OUT OF THEM

55%

ARE FOREIGN

<http://itcluster.lviv.ua>

Lviv IT: key facts



15000

15000+ professionals work in IT in Lviv



15% of Ukrainian IT people work in Lviv

+20%

20% predicted annual growth in the industry

60
1000

60 out of 1000 working population in Lviv are employed in ITi

Lviv IT: key facts



48,3% - get their skills during work in UT



56% are software developers

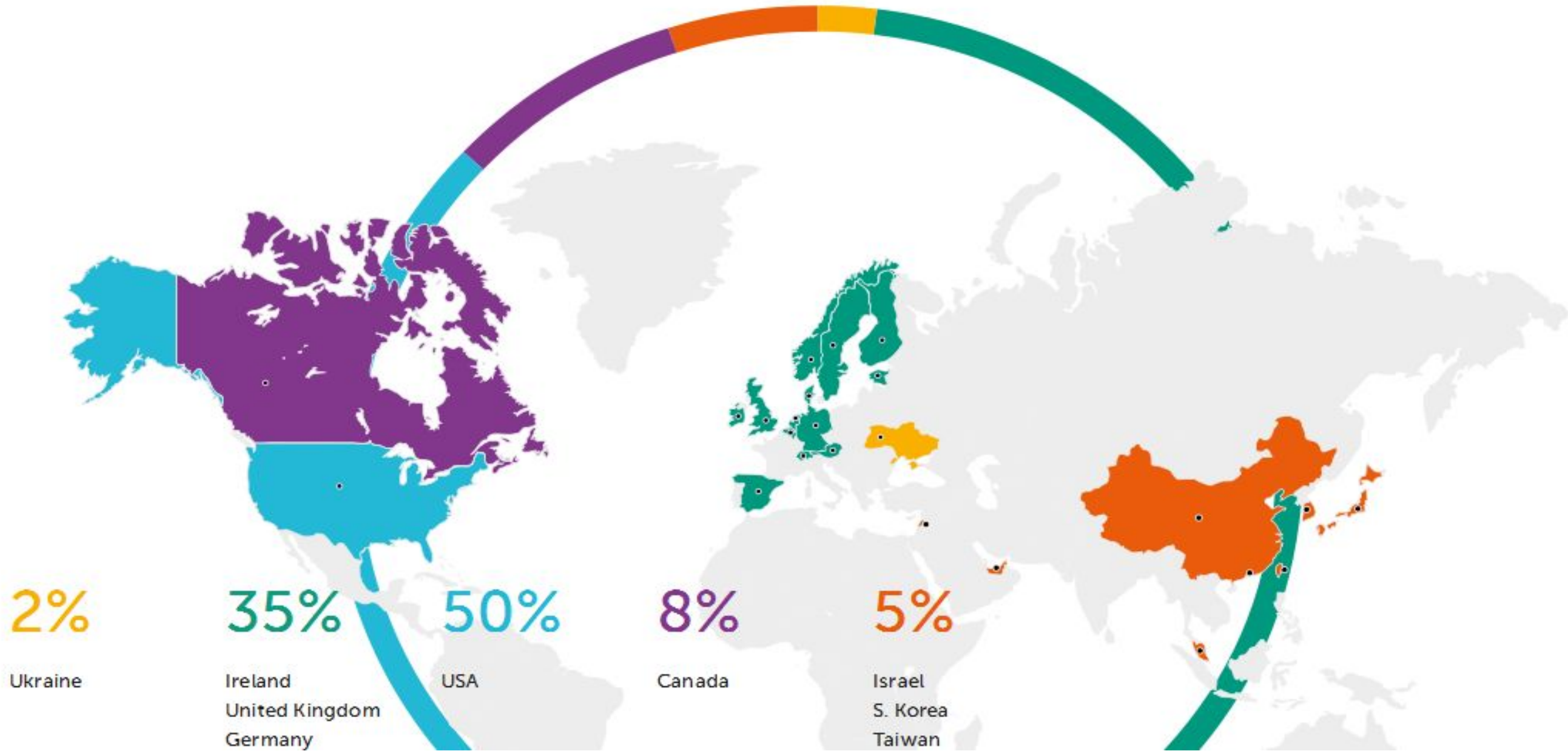


18,7% IT specialists work over their own startup



\$1736 is the median salary in Lviv IT market

Lviv IT: key facts



ЧОМУ ОБРАЛИ ІТ

50%

велика
зарплата

43%

перспективи
професійного
зростання

15%

ТАК ВИЙШЛО

82%

цікавість до технологій

27%

зручний графік

17%

Open-mind
КОЛЕКТИВ

21%

можливість
переїхати
за кордон

РІВЕНЬ АНГЛІЙСЬКОЇ



Advanced +

12%

Upper-intermediate

32%

Intermediate

35%

Pre-intermediate

17%

Elementary-

4%

ТСН

ПОРТРЕТ ІТ-ФАХІВЦЯ 2016

44 573 ГРН
Програмування: .NET

32 269 ГРН
Програмування:
C/C++

47 727 ГРН
Програмування: JAVA

31 178 ГРН
Mobile development

30 943 ГРН
Програмування:
інше



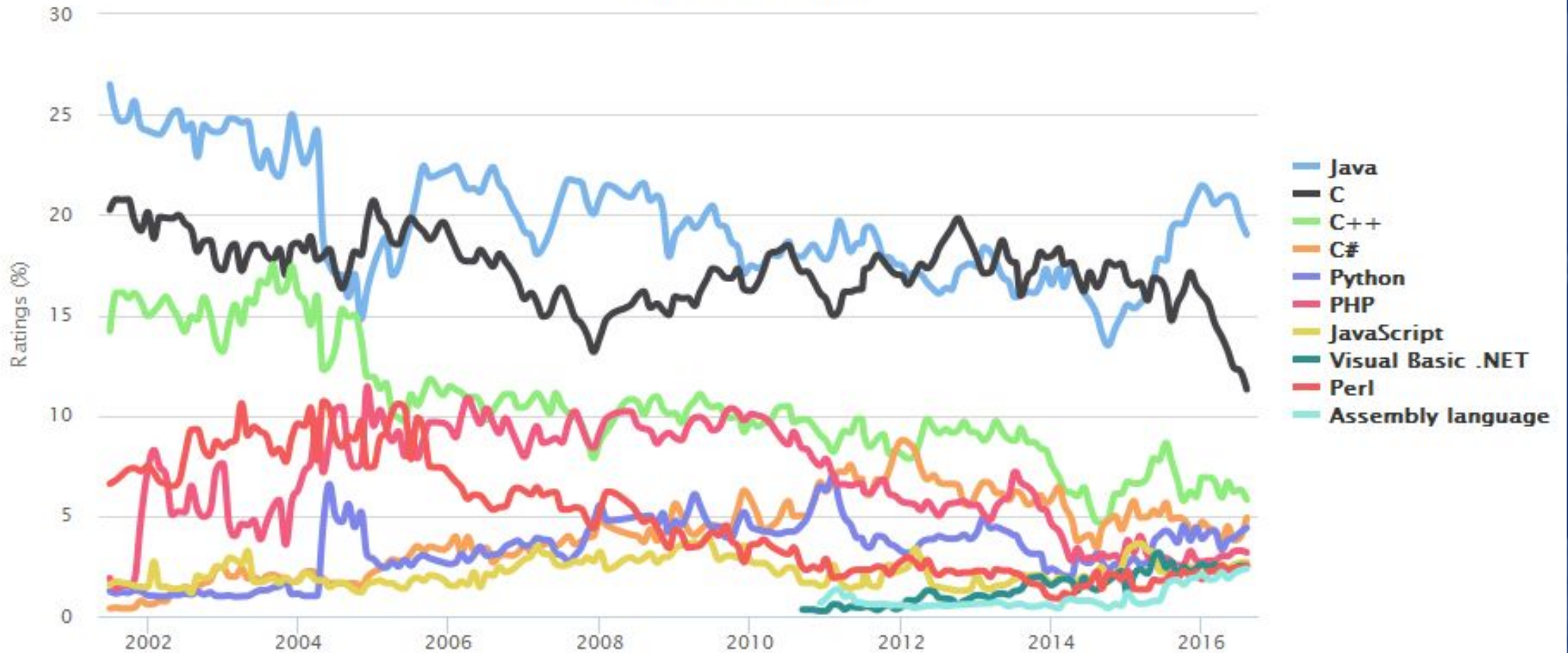
$\propto \Delta$



Programming languages popularity

TIOBE Programming Community Index

Source: www.tiobe.com



Internet of Things

A photograph of a rocket launch in space, showing the rocket ascending and leaving a trail of white smoke. The image is overlaid with a semi-transparent blue filter. The title 'Internet of Things' is centered at the top in a white, bold font.

The **internet of things (IoT)** is the network of physical devices, vehicles, buildings and other items - embedded with electronics, software, sensors, actuators, and network connectivity that enable these objects to collect and exchange data

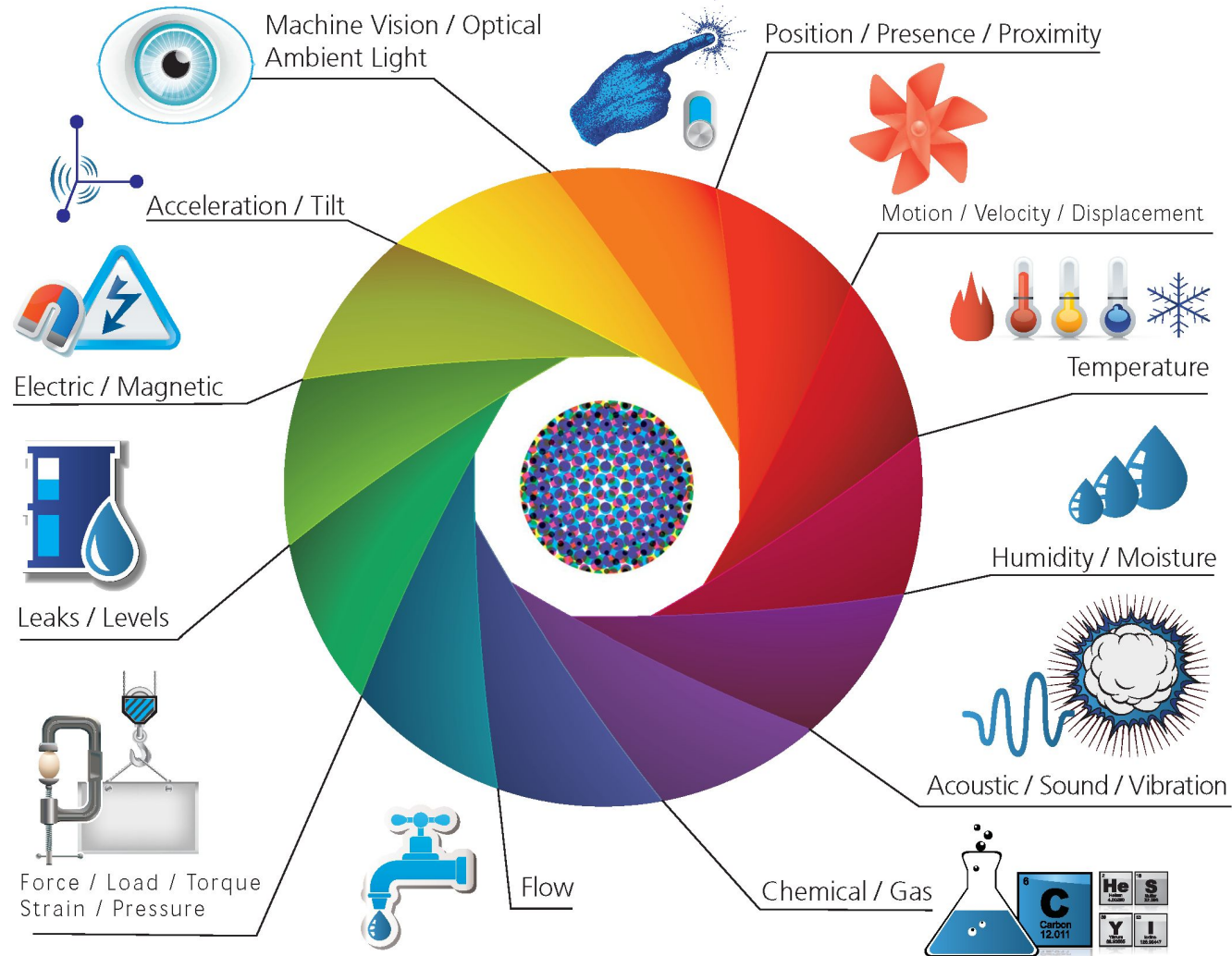
Internet of Things

A photograph of a rocket launch, showing the rocket ascending and leaving a large plume of white smoke and fire. The image is overlaid with a semi-transparent blue filter. The title 'Internet of Things' is centered at the top in a white, bold, sans-serif font.

The **internet of things (IoT)** is the network of physical devices, vehicles, buildings and other items - embedded with electronics, software, sensors, actuators, and network connectivity that enable these objects to collect and exchange data

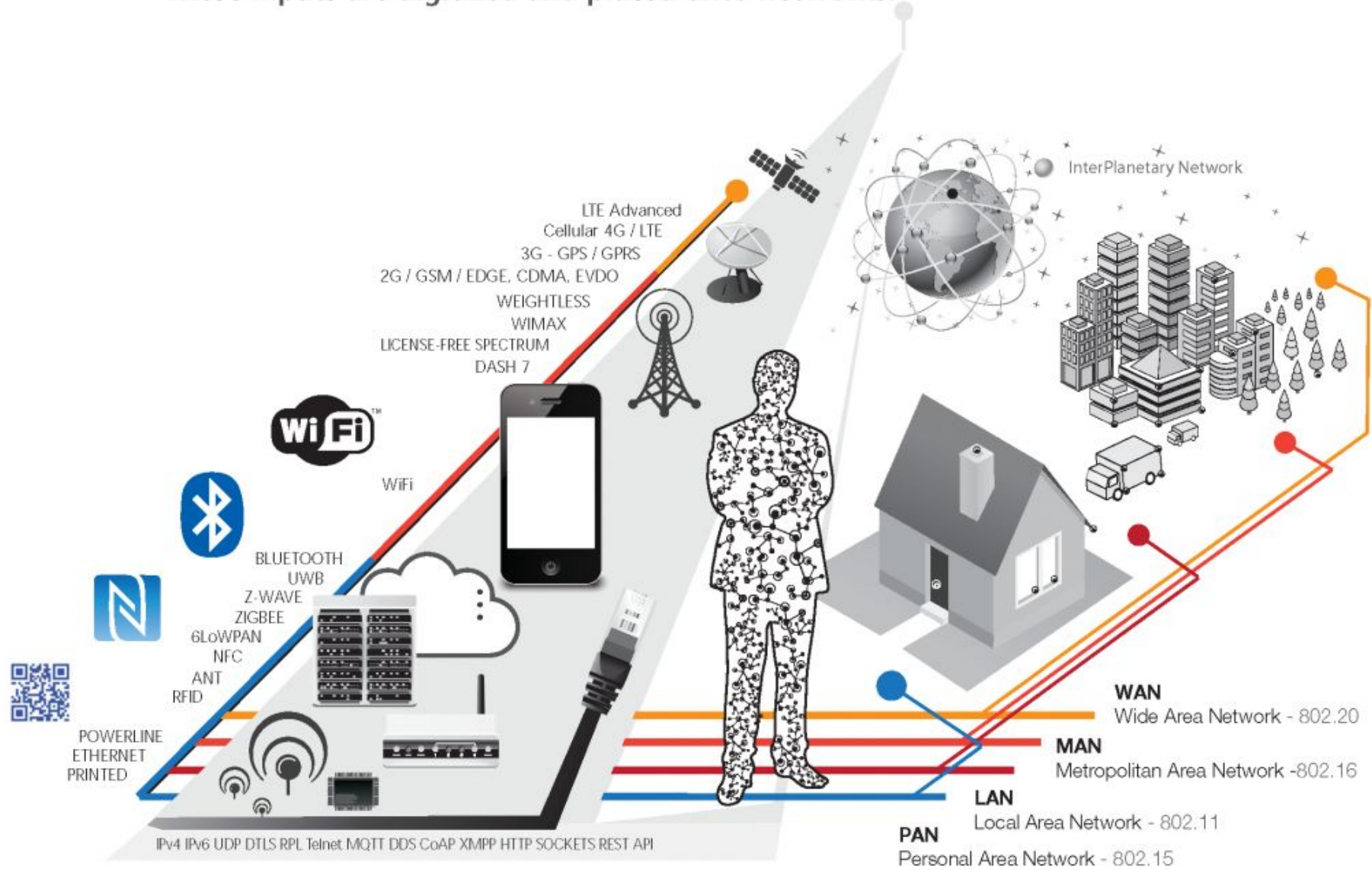
1 SENSORS & ACTUATORS

We are giving our world a digital nervous system. Location data using GPS sensors. Eyes and ears using cameras and microphones, along with sensory organs that can measure everything from temperature to pressure changes.



2 CONNECTIVITY

These inputs are digitized and placed onto networks.



Internet of Things applications



Internet of Things applications

<https://www.youtube.com/watch?v=NjYTzvAVozo>

A space shuttle is shown in the process of launching, ascending vertically against a backdrop of a blue sky filled with white, billowing clouds. The shuttle's white orbiter is attached to a large orange external tank and two white solid rocket boosters. A large plume of white and yellow smoke is visible at the base of the shuttle, indicating the point of liftoff.

Pooling

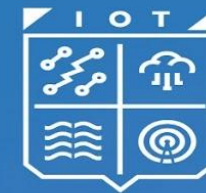
<https://answer garden.ch/334723>

A photograph of a space shuttle launching, viewed from a low angle. The shuttle is white with orange and black external tank and boosters. It is ascending vertically, leaving a large, billowing plume of white smoke and fire behind it. The background is a clear blue sky.

Program goal

To train an engineer that is capable:

- Design a smart (IoT) device
- Not one, but set of devices
- Connect those devices into network
- Establish efficient information exchange between devices and cloud
- Organize device interaction with environment
- Select how to present efficiently information to the end user
- Develop the system with provide recommendation for user based on the existing IoT platforms



INTERNET
OF THINGS

Thank you for attention!

www.iot.lviv.ua

www.facebook.com/iotlvivua

viruslviv@gmail.com