Corso sulla sicurezza IoT

IoT Security Course

Course Organisation

Unit 1: Introduction

a) Cybersecurity cube
b) Cryptography
c) TCP/IP protocol stack
d) Threats and Attacks (warms, botnets, sociotechnics, DoS, DDoS, spoofing, etc.)
e) Data Protection in IoT (Lifecycle, Data at Rest, Data in Use, Data on the Move)
f) Cybersecurity Technologies

Course Organisation

Unit 2: IoT and IIoT Fundamentals

a) IoT architecture
b) Sensors
c) Microcontrollers in IoT
d) Sensors & Microcontrollers
e) Radio communication for IoT and IIoT
f) Messages exchanging: i.a., CoAP, MQTT, RabbitMQ, Protecting MQTT and RabbitMQ
g) Examples of IoT Attacks: Mirai, Stuxnet, critical infrastructure attacks

Course Organisation

Unit 3: IoT Networks and Systems

a) Vulnerabilities and Attacks at the Hardware Layer (physical vulnerabilities, firmware vulnerabilities)
b) Vulnerabilities and Attacks at the Communication Layer
c) Threat Mitigation Technologies
d) Examples of IoT Network Systems

Course Organisation

Unit 4:IoT Networks and Systems Analysis and Security

a) System Security
b) Introduction to Incident Response
c) IT systems audits
d) Penetration tests
e) Advanced (Web) Hacking
f) Digital forensics

Course Organisation

Unit 5: Big Data Security

a) Data processing cycle analysis
b) Systems for Big Data management
c) Security issues related to the processing of big data (including AI)

1st Part: Online Learning (12-30.06)

In the first part students will start remote learning on a dedicated e-learning platform, in which they will learn about theoretical issues through access to didactic materials in the form of interactive multimedia presentations and recordings with their discussion.

The online part will last 20 days (60 hours), during which the teaching staff will be constantly available to students online.

2nd Part: Departure to Poland (03-30.07)

In the second part students will carry out the course in a full-time form at Poznan University of Technology, through laboratory classes (60 hours) in 3 groups of 15 students. Each group, under the supervision of the teaching staff, will have access to network devices, IoT laboratory sets, and specialized software.

Students will be introduced to Polish culture, visit Poznań and take a dance course (20 hours). For the duration of the full-time part of the summer school, students will be housed in PUT dormitories.

Why is it worth coming to Poland?

Beautiful places

Futuristic laboratories of cybersecurity

Innovative course for free!
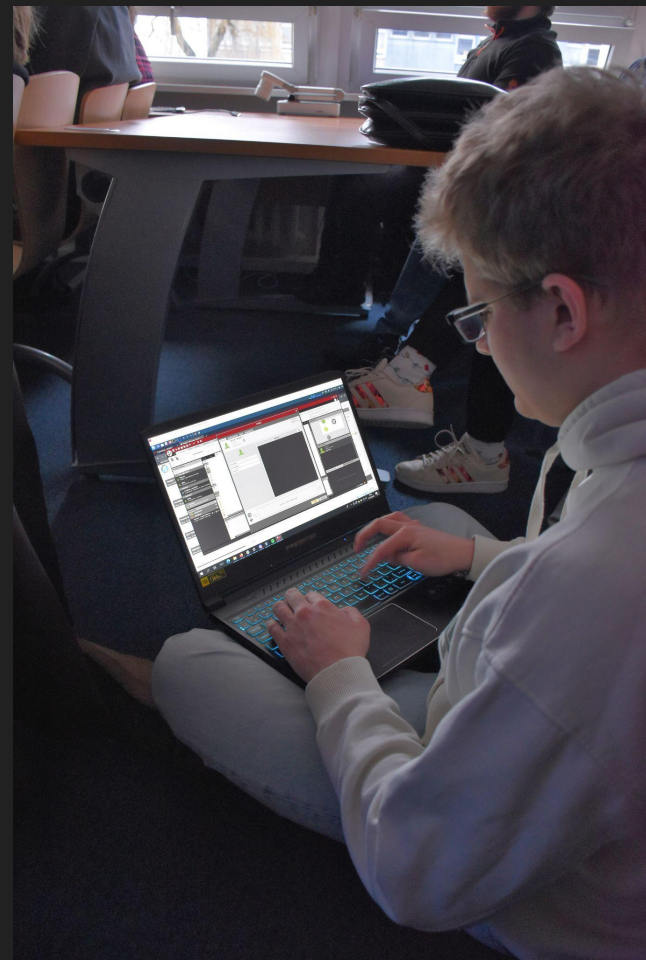
Memorable holidays!

- 3190 PLN per person as a grant supporting (about 708 euro)

- accommodation in PUT dormitories

- 60 hours laboratory classes

- optional free dance course (20 hours)

- tours across Poland

More informations:

https://nawa-spinaker.put.poznan.pl