ALIoT

Winter School
WINT 2018
"Academia and Industry cooperation in Internet of Things"

PROGRAMME

Ukraine
2018 February, 10-17

Erasmus+ ALIOT
Winter School WINT-2018
Academia and Industry cooperation in
Internet of Things

PROGRAMME

Ukraine,
February 9-17, 2018

Co-organized by
Yuriy Fedkovych Chernivtsi National University
National Aerospace University named after N.E. Zhukovsky "KhAI"

Media Partner
Magazine Carte Blanche

PARTICIPANTS

National Aerospace University n. a. N. E. Zhukovsky "KhAI"	Yuriy Fedkovych Chernivtsi National University
Prof. Vyacheslav Kharchenko Senior lecturer Artem Perepelitsyn Senior lecturer Oleg Illiashenko Assistant lecturer Anastasiia Strielkina MSc student Ivan Medvediev BSc student Yuriy Vlasov	Dr. George Vorobets Dr. Yuliya Tanasyuk Dr. Serhii Balovsyak Assistant lecturer Khristina Odaiska Assistant lecturer Oleksiy Pshenychnyi Natalia Ivanushchak Pavlo Avdiyenko MSc student Valentyna Horditsa Natalia Ivanushchak Olexander Vorobets Ilya Hamula
Volodymyr Dahl East Ukrainian National University	
Prof. Inna Skarha-Bandurova Assistant lecturer Tetiana Biloborodova MSc student Maryna Derkach MSc student Vladyslav Hyshev	
Pukhov Institute for Modelling in Energy Engineering	**Odessa National Polytechnic University**
Prof. Oleksandr Chemerys Sergii Sushko Aleksey Nasteka	Prof. Olexandr Drozd Prof. Dmitry Maievsky Dr. Olena Maevska Ihor Perebyjnis Serhii Surkov BSc student Lolita Vystorobska BSc student Victor Zubak
Newcastle University	
Prof. Chris Phillips	
Leeds Beckett University	
Dr. Ah-Lian Kor	
Ternopil National Economic University	**IT Alliance**
Prof. Anatoliy Sachenko Prof. Zbushek Dombrovskyi Prof. Volodymyr Kochan Dr. Miroslav Komar Dr. Grigoriy Gladiy Maksym Kovalchuk Pavlo Bykovyy Oleksandr Osolynskiy Diana Zahorodnia Vitalii Dorosh Anastasiia Novosad Yuliya Skorobohata Vasyl Koval	Olena Golembovska
	Petro Mohyla Black Sea State University
	Prof. Yurii Kondratenko Dr. Galyna Kondratenko Oleksandr Gerasin Andriy Topalov Danyl Chabanovskyi
	Zaporizhia National Technical University
	Dr. Ravil Kudermetov Dr. Dmytro Pavlenko Andrii Paziy Serhiy Leoshchenko Denis Mazur Anton Fedko

SCHEDULE

Time / date	February 10, Saturday	February 11, Sunday	February 12, Monday	February 13, Tuesday	February 14, Wednesday	February 15, Thursday	February 16, Friday	February 17, Saturday
7:00				Breakfast				
7:45								
8:15				Transfer from Yaremche to Bukovel				
8:30								
8:45								
9:00		Ah-Lian Kor. Pervasive IoT						
9:15		O.Golembovska. IoT: G or D?						
9:30		V.Kharchenko, O. Illiashenko. From CABRIOLET to ALIOT: How to Continue the Success	PIMEE Team presentations			Team-building		Free time
9:45								
10:00								
10:15								
10:30	Registration	EUNU Team presentations						
10:45								
11:00	Coffee-start							
11:15								
11:30			ChNU Team presentations					
11:45	V.Melnychuk, C.Phillips, V.Kharchenko, O.Arkhangelsky, G.Vorobets, O.Golembovska	Coffee-break						
11:50	V.Kharchenko. Objectives of WINT2018. Presentation of teams							
12:00	Welcome from Industrial partners	ONPU Team presentation	Lunch					
12:15								
12:30								
12:45	KhAI Team presentations							
13:00								
13:15								
13:30								
13:45	Lunch							
14:00								
14:15								
14:30			Transfer to Yaremche					
14:45								
15:00	PMBSNU Team presentations	TNEU Team presentations		Transfer from Bukovel to Yaremche				
15:15								
15:30								
15:45								
16:00	Coffee-break			Free time				
16:15								
16:30	ZNTU Team presentations	Coffee-break						
16:45								
17:00		D.Maevsky. Training					Departure	
17:15								
17:30	Free time	2nd WINT-2018 day remarks. Discussion		Dinner				
17:45								
18:00								
18:15								
18:30		Free time						
18:45								
19:00			Free time	KhAI, ONPU Team trainings & presentations	PMBSNU, ZNTU Teams trainings & presentations	IPMEE, TNEU Teams trainings & presentations	ONPU Team trainings & presentations	
19:15	Social event. Theatre							
19:30								
19:45		Friedly dinner						
20:00								
20:15								
20:30								
20:45								
21:00								

February 10, Saturday

10:30 – 11:30   Registration, coffee start

11:30 – 11:50   V. Melnychuk, C. Phillips, V. Kharchenko, G. Vorobets, O. Golembovska.
Introduction. Welcome. WINT 2018 school opening

11:50 – 12:00   V. Kharchenko
Objectives of WINT2018. Presentation of teams

12:00 – 12:15   Welcome from Industrial partners
I. Mosin, T. Karpiv. *From the experience of applying some issues of "Internet of Things" technology while teaching the basics of robotics to schoolchildren*

12:15 – 13:30   KhAI Team presentations
A. Perepelitsyn. *Prospective Usage of Programmable Logic for Smart Systems and IoT*
A. Strielkina. *Healthcare IoT Cloud Infrastructure Analysis*
I. Medvediev. *Selection and analysis of IoT solutions for patient health monitoring*
Yu. Vlasov. *Evolutionary goals and cases of IoT*

13:30 – 14:30   Lunch

14:30 – 16:00   PMBSNU Team presentations
Yu. Kondratenko, G. Kondratenko. *Results of the Erasmus+ ALIOT project. PMBSNU's team*
D. Chabanovskyi. *Eye-tracking technology in IoT. Modules development results*
O. Gerasin. *IoT for Industrial Systems: Robotic Applications*
A. Topalov. *IoT for Indusrial and Marine Complexes*

16:00 – 16:15   Coffee-break

17:00 – 17:30   ZNTU Team presentations
D. Pavlenko. *Results of the Erasmus+ ALIOT project. ZNTU's team*
A. Paziy. *Application of IoT in vibration diagnostics of the process of cutting thin-walled parts with end mills*
S. Leoshchenko. *The application of IoT technologies for vibration diagnostics of complex aviation systems*
D. Mazur. *Software defined networking: analysis of main components*
A. Fedko. *Main features of Cyber-physical systems*

| 17:30 – 18:30 | Free time |
| 18:30 – 21:00 | Social event. Theatre |

February 11, Sunday

9:00 – 9:30	Ah-Lian Kor. *Pervasive IoT*
9:30 – 9:45	O. Golembovska. *Internet of Things: G or D?*
9:45 – 10:00	V. Kharchenko, O. Illiashenko. *From CABRIOLET to ALIOT: How to Continue Success in IoT Domains*
10:00 – 11:30	EUNU Team presentations I. Skarha-Bandurova. *Current outcomes of EUNU team in ALIOT project* T. Biloborodova. *Study of heart rate data processing technique in IoT environments* M. Derkach, V. Hyshev. *Solutions for Intelligent Transport Systems: Towards a real-time public transport information services*
11:30 – 12:00	Coffee-break
12:00 – 13:30	ONPU Team presentation D. Maevsky, O. Maevsky. *Results of the project ALIOT. ONPU team* O. Drozd. *Smart Technologies* L. Vystorobska. *IoT for Smart building and city. Simulation of IoT and IoE-based systems. Overview of university courses* S. Surkov. *Modern Technologies for development of IoT systems* I. Perebyjnis. *Smart city-future solution for saving lives* V. Zubak. *PC1. Simulation of IoT and IoE-based systems. Laboratory stand*
13:30 – 14:30	Lunch
14:30 – 16:30	TNEU Team presentations A. Sachenko. *Brief results of the TNEU contribution for the Erasmus+ ALIOT project* A. Sachenko. *Intelligent System for Monitoring the Transport Flow - Part 1* M. Kovalchuk. *Intelligent System for Monitoring the Transport Flow - Part 2* P. Bykovyy. *Intelligent System for Monitoring the Transport Flow - Part 3* D. Zahorodnia. *Intelligent System for Monitoring the Transport Flow - Part 4* O. Osolynskiy. *Intelligent System for Monitoring the*

Transport Flow - Part 5

V. Kochan. *Intelligent System for Monitoring the Transport Flow - Part 6*

V. Koval. *Deep Learning Neural Network for IoT - Part 1*

M. Komar. *Deep Learning Neural Network for IoT - Part 2*

Y. Skorobohata. *Deep Learning Neural Network for IoT - Part 3*

V. Dorosh. *Deep Learning Neural Network for IoT - Part 4*

Z. Dombrovskyi. *Conceptual Model for Smart Grid System in IoT Environment - Part 1*

G. Gladiy. *Conceptual Model for Smart Grid System in IoT Environment - Part 2*

A. Novosad. *Conceptual Model for Smart Grid System in IoT Environment - Part 3*

16:30 – 17:00	Coffee-break
17:00 – 17:15	Dmytro Maevsky. *Training*
17:15 – 18:00	2nd WINT-2018 day remarks. Discussion
18:15 – 19:00	Free time
19:00 – 21:00	Friendly dinner

February 12, Monday

9:30 – 10:30   IPME Team Presentations

O. Chemerys. *Results of the Erasmus+ ALIOT project-PIMEE team*

S. Sushko. *Energy effective computations on Raspberry Pi 3 for the Internet of Things*

A. Nasteka. *Use of blockchain technology to solve cybersecurity problems in Critical Information Infrastructure Protection*

10:30 – 12:00   ChNU Team Presentations

S. Balovsyak, K. Odaiska. *Software for performing Edge calculations in computer networks when processing video streams*

N. Ivanushchak. *Methods of machine learning to support Internet technology and cyber-physics systems*

O. Pshenychnyi, P. Avdiyenko. *Internet technology for remote control of smart meters*

V. Horditsa, Yu. Tanasyuk. *An overview of the features of the Cisco course "Introduction to the Internet technologies of things, and possibilities of its use for cyber-physics systems*

I. Hamula, G. Vorobets, O. Vorobets. *Basic set of laboratory works for entering the course "Technologies of the Internet of things for cyber-physics systems"*

12:00 – 13:00	Lunch
13:00 – 17:15	Transfer to Yaremche
17:15 – 21:00	Free time

February 13, Tuesday

7:00 – 7:45	Breakfast
7:45 – 8:30	Transfer from Yaremche to Bukovel
8:30 – 14:30	Team building
14:30 – 15:45	Transfer from Bukovel to Yaremche
15:45 – 17:00	Free time
17:00 – 18:30	Dinner
18:30 – 21:00	Continued trainings, working in teams, discussions (KhAI, ONPU)

V. Kharchenko. *Internet of Drones for CI Safety and Security*

Yu. Vlasov. *4D Printing in IoT Context*

A. Perepelitsyn. *SAKAI*

D. Maevsky. *IoT risk assessment training, part 2*

February 14, Wednesday

7:00 – 7:45	Breakfast
7:45 – 8:30	Transfer from Yaremche to Bukovel
8:30 – 14:30	Team building
14:30 – 15:45	Transfer from Bukovel to Yaremche
15:45 – 17:00	Free time
17:00 – 18:30	Dinner
18:30 – 21:00	Continued trainings, working in teams, discussions (PMBSNU, ZNTU)

Yuriy Kondratenko. *Names of Distinguished Scientists and Researchers: 20th and 21st Centuries*

Yu. Kondratenko. Mamdani and Sugeno fuzzy controllers

R. Kudermetov. *Cyber-Physical Systems: Modelling Challenges*

R. Kudermetov. *Software defined networking: practical realization for learning purposes*

February 15, Thursday

7:00 – 7:45	Breakfast
7:45 – 8:30	Transfer from Yaremche to Bukovel
8:30 – 14:30	Team building
14:30 – 15:45	Transfer from Bukovel to Yaremche
15:45 – 17:00	Free time
17:00 – 18:30	Dinner
18:30 – 21:00	Continued trainings, working in teams, discussions (ONPU, PMBSNU, ZNTU)

D.Maevsky. *IoT risk assessment training, part 3*

A. Sachenko, M. Komar, V. Dorosh. *Intelligent Cyber Defense System*

A. Sachenko, V. Kochan, O. Osolynskiy. *Laboratory Virtual Instrument Engineering Workbench (LabVIEW) for IoT*

O. Chemeris. *HORIZON-2020 NCP "Secure socities" presentation*

February 16, Friday

7:00 – 7:45	Breakfast
7:45 – 8:30	Transfer from Yaremche to Bukovel
8:30 – 14:30	Team building
14:30 – 15:45	Transfer from Bukovel to Yaremche
15:45 – 17:00	Free time
17:00 – 18:30	Dinner
18:30 – 21:00	Continued trainings, working in teams, discussions (LBU, ONPU)

Ah-Lian Kor. *Next Generation Data Centres*

D. Maevsky. *IoT risk assessment training. The results of expert assessment analysis and discussion*

February 16, Saturday

7:00 – 7:45	Breakfast
7:45 – 12:45	Free time
12:45 – 21:00	Departure