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Středisko společných činností Akademie věd ČR

INTERNATIONAL SCIENCE SUMMER CAMP 2018

ARTIFICIAL INTELLIGENCE & ROBOTICS

„The best way to predict the future is to create it.“Peter Diamandis

Agenda

5 – 11, AUGUST 2018

PRAGUE, CZECH REPUBLIC

ISSC'18
International Science Summer Camp
CZECH REPUBLIC

PROGRAM

5 – 11, August 2018

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	Morning time	Lunch time	Afternoon time	Late afternoon	
Sunday 5.8.			Arrival, transportation from the airport to the dormitory	Get together	
Monday 6.8.	Opening, Lecture	Lunch	Lectures, Excursion	Dinner	Social and cultural activities
Tuesday 7. 8.	Lectures, Visit	Lunch	Lectures	Dinner	Social and cultural activities
Wednesday 8. 8.	Excursion	Lunch	Lectures	Dinner	Social and cultural activities
Thursday 9. 8.	Lectures	Lunch	Lectures	Dinner	Social and cultural activities
Friday 10. 8.	Presentations	Lunch	Presentations	Farewell Dinner	
Saturday 11. 8.	Departure, transportation to the airport				

DAY 1

Sunday – August 5

Masaryk Dormitory - Dejvice

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Arrival day
Transportation from the airport to the dormitory
Get together dinner

DAY 2

Monday – August 6

NTK, Technická 6

09h00 – 09h15 Welcome & Opening of the Camp

09h15 - 10h00 Introduction to the Camp´s group projects, timeline of the group projects, division into groups

10h15 – 11h15 **Understanding TED & Understanding Understanding**
Samuel Titěra */ TEDx Organizer & Translator*

Why have the short talks of TED attracted so much attention? What are the core things to understand when you try to „change someone's mind", either to educate them or to sell them something?

12h00 – 13h30 Lunch at University canteen

13h30 - 14h30 **Artificial Intelligence: Technology and Prospects**
Professor Roman Barták */ Department of Theoretical Computer Science and Mathematical Logic, Faculty of Mathematics and Physics of the Charles University*

What is Artificial Intelligence? Many people are using this notion, but usually without ever knowing, what it precisely means. This talk uncovers the hidden, and maybe a bit surprising formula behind any AI system. We will look at recent successes of AI systems, explain what is behind them, and discuss the prospects. The attendees will also learn something about themselves.

DAY 2

Monday – August 6

NTK, Technická 6

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16h00 – 18h00	Visit at the **ELI Beamlines** located in Dolní Břežany. ELI Beamlines is part of the Extreme Light Infrastructure (ELI) project, a new Research Infrastructure of pan-European interest and part of the European Strategy Forum on Research (ESFRI) Roadmap.
19h00 – 20h00	Dinner
20h30 – 22h00	Social or cultural activities

DAY 3

Tuesday – August 7 / Artificial life

CIIRC, Jugoslávských partyzánů 1580/3 & NTK, Technická 6

Christopher Langton characterized artificial life as "locating life-as-we-know-it within the larger picture of life-as-it-could-be," a concept that brought together people interested in computer models of adaptive and self-organizing systems, not just in biology but also in economics, social science, and physical chemistry. Artificial life raises ethical issues and biosecurity issues.

09h00 – 10h00 **A window to autonomous robotics**

Professor Václav Hlaváč */ Department of Cybernetics, Center for Machine Perception of the Czech Technical University in Prague; Czech Institute of Informatics, Robotics and Cybernetics (CIIRC)*

The talk will introduce the autonomous robotics. I will start from the principles needed to create/use robots able to perceive the surrounding world and understand it, plan the activity of robots with robot's world including the possibility to modify it. I will explain architectures of robots with cognitive abilities and demonstrate some of their implementations demonstrated. The studied matter has a wider applicability in designing and building of intelligent machines. I will show practical outcomes of our research achieved in several projects.

10h15 – 11h15 CIIRC 's Workplace visit

11h45 – 12h45 Lunch at University canteen

13h15 – 14h15 **7 Tricks of Best TED Speakers**

David Svoboda / Presentation & Graphic Design Coach

What are the simple, practical skills you can learn to make your talk or presentation attractive, understandable and successful? Learn how to enhance any public.

DAY 3

Tuesday – August 7 / Artificial life

CIIRC, Jugoslávských partyzánů 1580/3 & NTK, Technická 6

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14h30 – 15h30 **Artificial Intelligence, Smart Robots, and Laws**

Alžběta Krausová, LL.M. */ Institute of State and Law of Czech Academy of Sciences*

Artificial Intelligence and smart robots are becoming one of the driving forces in our economy. They assist us in various tasks. Intelligent systems manage transportation, confirm scientific theories, or even save lives. On the other hand, they can become very dangerous when used as autonomous weapons or tools for monitoring people. Moreover, human-like robots give rise to many emotions. This lecture will introduce ethical, social and legal aspects of these technologies and reply to questions such as who should be liable when a robot causes damage, who owns copyright to art created by AI, or even whether we should grant rights to robots.

16h00 – 17h30 Group work

18h00 – 19h00 Dinner at University canteen

20h00 – 22h00 Social or cultural activities

DAY 4

Wednesday – August 8 / Information Science

CIIRC, Jugoslávských partyzánů 1580/3 & NTK, Technická 6

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Computer science is not as old as physics; it lags by a couple of hundred years. However, this does not mean that there is significantly less on the computer scientist's plate than on the physicist's: younger it may be, but it has had a far more intense upbringing! (Richard Feynman)

9h30 – 11h00 Visit at **The Czech Institute of Informatics, Robotics and Cybernetics**, and presentation of **Testbed**: the entirely unique concept of a test production line that, thanks to the variability of machines, robots and software tools, including the combination of both expanded and virtual reality, allows the testing of Industry 4.0 processes prior to their introduction into real-world manufacturing.

11h00 – 12h00 **Practical Storytelling**
Martin Vasquez */ Actor, Improvisation Leader and Moderator*

How to earn not only your audience's attention, but also their hearts and memory? Learn that stories are not only about love and hate, but can serve numbers and scientific facts as well.

12h15 – 13h15 Lunch at University canteen

13h45 – 14h45 **We Know that You Like It: Mining Users' Emotions from Text Data**
Dr. Kateřina Veselovská */ Institute of Formal and Applied Linguistics, Faculty of Mathematics and Physics of the Charles University*

Are the users satisfied with this type of the phone? What are the most popular movies discussed on this site? Which of the candidates is well-received on Facebook?

DAY 4

Wednesday – August 8 / Information Science

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Current computational linguistics witnesses a massive increase of interest in automatic detection of emotions in written data. Sentiment analysis thus became a powerful natural language processing means of public opinion mining. However, is it even possible to distinguish between good and bad using statistical methods? How would you treat irony, idioms, innovative vulgarisms and other inherent elements of natural language? Are emotions language-independent? I will share my thoughts and emotions towards these issues, describing the state-of-the art approaches employed in sentiment analysis.

15h00 – 16h00 **Robot Motion Planning**

Dr. Pavel Surynek */ Department of Applied Mathematics, Faculty of Information Technology of the Czech Technical University in Prague*

Motion planning in robotics is one of fundamental challenges in artificial intelligence. The planning task is to find a sequence of movements and actions for a robot so that it achieves its goal. The goal may consist in picking an item by robot's hand or moving the robot from one location to another etc. The planning task becomes more difficult when we want multiple robots to cooperate in fulfilling their common goal. In such a case, we need to plan coordination among robots carefully so that robots don't collide and help each other. We will describe basic planning and coordination algorithms for single robot and multi-robot teams.

16h30 – 17h30 Group work

18h00 – 19h00 Dinner at University canteen

19h30 – 21h30 Social or cultural activities

DAY 5

Thursday – August 9 / Cyberpunk

NTK, Technická 6

Cyberpunk is a belief that a few outsiders, armed with their own individuality and technological capability, can fend off the tendencies of traditional institutions to use technology to control society. Cyberpunk is a subgenre of science fiction in a futuristic setting that tends to focus on "a combination of low life and high tech" featuring advanced technological and scientific achievements, such as artificial intelligence and cybernetics, juxtaposed with a degree of breakdown or radical change in the social order.

09h45 – 10h45 **Religion and digital games**

Dr. Zuzana Kostićová */ Department of Religious Studies, The Hussite Theological Faculty of the Charles University*

Widely popular digital games attract a great deal of attention - praise, criticism, as well as detached scholarly analysis. This presentation is an introduction to the phenomenon of digital game as seen through the lens of Religious Studies. What is the relationship between games (and contemporary popular culture at large) and religion? What are the typical images of different real religions - and what about alternative universes of the transmedia and their fictitious spirituality? And is there perhaps some likeness between gaming and religious rituals?

11h00 – 12h00 **Cyberpunk is not dead**

Dr. Marie König Dudziaková */ Institute of Information Science and Librarianship, Faculty of Arts of the Charles University*

This lecture covers origins of cyberculture and follows the path of cyberpunk from its origins in the 80`s to mainstream culture phenomenon. We address topography of cyberspace, problematics of cyborgs and technological body modification.

12h30 – 13h30 Lunch at University canteen

DAY 5

Thursday – August 9 / Cyberpunk

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14h00 – 15h00 **Cyberspace: The Fifth Military Domain**

Dr. Jakub Fučík */ Centre for Security and Military Strategic Studies of the University of Defence*

The development of communication and information technologies leads not only to the new possibilities and opportunities, how to improve society well-being, but also to the dependence on these technologies. From the strategic perspective cyberspace represents new dimension where state and non-state actors compete with each other to enforce their own interests – often at the expense of others. Cyber-attacks constitute new kind of threats (and tools) which could have harmful impact not only in this domain, but also in other (physical) dimensions. Cyber defense and cyber security thus become integral part of the public and private interests. The lecture will focus on military implications of cyberspace and their influence on the character of contemporary armed conflicts.

15h30 – 17h00 Group work

18h00 – 19h00 Dinner at University canteen

20h00 – 22h00 **Movie night**

DAY 6

Friday – August 10 / Presentation Day

Prague Startup Centre, Bubenské náb. 306/13

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09h00 -12h00	Training for presentations
12h00 – 13h30	Lunch
13h30 – 16h30	Conclusions from group work / presentations
16h30 -17h30	Discussion an wrap-up of the Camp
18h00 – 22h00	Farewell Dinner Party

DAY 7

Saturday – August 11

Departure day
Transportation to the airport

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YOUR STAY

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Please note that these programme may change.