

**2018 IEEE First International Conference  
on System Analysis & Intelligent Computing (SAIC)**

# **CONFERENCE PROGRAM**

**08-12 October, 2018  
Kyiv, Ukraine**

# CONFERENCE SCHEDULE

**08.10.2018**

Arrival and Accommodation of Participants

**09.10.2018**

**9:30 – 10:00** Conference Registration

**10:00 – 10:30** Opening Ceremony

**10:30 – 13:00** Plenary Session

**13:00 – 14:00** Lunch Break

**14:00 – 17:30** Oral Sessions (**Track 1**)

**10.10.2018**

**10:00 – 13:00** Oral Sessions (**Track 1, Track 2, Track 3**)

**13:00 – 14:00** Lunch Break

**14:00 – 17:00** Oral Sessions (**Track 1, Track 2, Track 3, Track 4**)

**11.10.2018**

**10:00 – 13:00** Oral Sessions (**Track 1**)

**12.10.2018**

Departure of Participants

**09.10.2018**

**CONFERENCE REGISTRATION**

Academic Building #6,  
Administrative Council Hall of Igor Sikorsky Kyiv Polytechnic Institute  
(9:30 – 10:00)

**OPENING CEREMONY**

Academic Building #6,  
Administrative Council Hall of Igor Sikorsky Kyiv Polytechnic Institute  
(10:00 – 10:30)

**PLENARY SESSION**

Academic Building #6,  
Administrative Council Hall of Igor Sikorsky Kyiv Polytechnic Institute  
(10:30 – 13:00)

1	<b>Vincenzo Piuri</b>	Ambient Intelligence: Convergence of Artificial Intelligence, Machine Learning, Biometrics, Cloud Computing, and Internet-of-things
2	<b>Vladimir Hahanov</b>	Quantum Memory-driven Cyber Culture for Design and Test
3	<b>Yevgeniy Bodyanskiy, Yuriy Zaychenko, Olena Boiko and Galib Hamidov</b>	Evolving Hybrid GMDH-Neuro-Fuzzy Networks and Their Applications
4	<b>Peter Bidyuk, Aleksandr Gozhyj and Irina Kalinina</b>	Modeling Military Conflicts Using Bayesian Networks

**LUNCH BREAK**

(13:00 – 14:00)

**09.10.2018**

**ORAL SESSIONS**

**TRACK 1: System Analysis of Complex Systems**

Academic Building #35,  
conference hall 001  
(14:00 – 17:30)

1	<b>Michael Zgurovsky, Viktor Putrenko, Iryna Dzhygyrey, Andrey Boldak, Kostiantyn Yefremov, Nataliia Pashynska, Ivan Pyshnograiev and Sergiy Nazarenko</b>	Parameterization of Sustainable Development Components Using Nightlight Indicators in Ukraine
2	<b>Galina Gorelova and Nataliya Pankratova</b>	Strategy of Complex Systems Development Based on the Synthesis of Foresight and Cognitive Modelling Methodologies
3	<b>Victor Romanenko and Yuriy Milyavsky</b>	Study of Automated Control Methods in Cognitive Maps' Impulse Processes with Suppressing Constrained Disturbances
4	<b>Vitalii Tsyganok, Sergii Kadenko, Oleh Andriichuk and Pavlo Roik</b>	Combinatorial Method for Aggregation of Incomplete Group Judgments
5	<b>Nataliya Pankratova and Nadezhda Nedashkovskaya</b>	Evaluation of Ecology Projects for Black Sea Odessa Region on Basis of a Network BOCR Criteria Model
6	<b>Oleg Barabash, Valentin Sobchuk, Nataliia Lukova-Chuiko and Andrii Musienko</b>	Application of Petri Networks for Support of Functional Stability of Information Systems
7	<b>Yoshio Matsuki and Petro Bidyuk</b>	Empirical Analysis of the Relation Between Moon's Gravitational-Wave and Earth's Global Temperature: Influence of Time-Trend Cyclic Change of Distance from Moon

**10.10.2018**

**ORAL SESSIONS**

**TRACK 1: System Analysis of Complex Systems**

Academic Building #35,  
conference hall 001  
(10:00 – 13:00)

1	<b>Oleksandr Nakonechnyi and Yuri Podlipenko</b>	Guaranteed Estimation of Solutions of First Order Linear Systems of Ordinary Differential Periodic Equations with Inexact Data from Their Indirect Noisy Observations
2	<b>Sergiy Prykhodko, Natalia Prykhodko and Lidiia Makarova</b>	Building the Non-Linear Regression Equations on the Basis of Multivariate Normalizing Transformations
3	<b>Valerii Zhabin, Ivan Dychka and Valentina Zhabina</b>	Anasysis of On-Line Computation Effectiveness in Redundant Number System
4	<b>Ganna Shyshkanova</b>	About Stability of First Kind Equation Solving
5	<b>Oleh Pihnastyi and Valery Khodusov</b>	Stochastic Equation of the Technological Process
6	<b>Oleh Pihnastyi and Valery Khodusov</b>	Model of a Composite Magistral Conveyor Line

**TRACK 2: Computational Intelligence**

Academic Building #35,  
conference hall 120  
(10:00 – 13:00)

1	<b>Roman Galagan and Andriy Momot</b>	The Use of Backpropagation Artificial Neural Networks in Thermal Tomography
2	<b>Roman Shaptala, Gennadiy Kyselov and Anna Kyselova</b>	Neural Dialogue System with Emotion Embeddings
3	<b>Iryna Perova, Yevgeniy Bodyanskiy, Yelizaveta Brazhnykova and Pavlo Mulesa</b>	Neural Network for Online Principal Component Analysis in Medical Data Mining Tasks
5	<b>Alexander Makarenko and Viacheslav Osaulenko</b>	Application of Cellular Automates in Some Models of Artificial Intelligence
6	<b>Bohdan Chapaliuk and Yuriy Zaychenko</b>	Deep Learning Approach in Computer-Aided Detection System for Lung Cancer

<b>TRACK 3: Intelligent Computing Technologies</b>		
Academic Building #35, lecture hall 105 (10:00 – 13:00)		
1	<b>Anatolii Petrenko and Bogdan Bulakh</b>	Intelligent Service Discovery and Orchestration
2	<b>Leonid Lyubchyk, Galyna Grinberg and Klym Yamkovyi</b>	Integral Indicator for Complex System Building based on Semi-Supervised Learning
3	<b>Vadim Mukhin, Yaroslav Kornaga, Yuriy Bazaka, Maxim Bazaliy and Alla Yakovleva</b>	Modified Method of Software Testing for Distributed Computer System
4	<b>Ivan Ostroumov and Nataliia Kuzmenko</b>	An Area Navigation (RNAV) System Performance Monitoring and Alerting
5	<b>Andriy Bomba, Yuriy Turbal, Nataliia Kunanets and Volodymyr Pasichnyk</b>	Model of the Information Shock Waves in Social Network Based on the Special Continuum Neural
6	<b>Vasyl Lenko, Volodymyr Pasichnyk, Nataliia Kunanets and Yurii Shcherbyna</b>	Type-Theoretical Foundations of Certified Reasoning in Coq
7	<b>Alexander Kolchin</b>	A Novel Algorithm for Attacking Path Explosion in Model-Based Test Generation for Data Flow Coverage
8	<b>Artem Korobov, Alona Moskalenko, Volodymyr Nahornyi, Julia Zavgorodnya, Oleg Berest and Vyacheslav Zhurba</b>	Parameters Optimization Method of the Information-Extreme Object Recognition System on the Terrain
<b>LUNCH BREAK</b> (13:00 – 14:00)		

**10.10.2018**

**ORAL SESSIONS**

**TRACK 1: System Analysis of Complex Systems**

Academic Building #35,  
conference hall 001  
(14:00 – 17:00)

1	<b>Dan Tavrov, Olena Temnikova, Volodymyr Temnikov, Valerii Kozlovskiy and Andrii Temnikov</b>	Architecture of Computing with Words Based Information Technology for Proactive Aviation Security Control
2	<b>Sergey Vladov, Yurii Shmelov, Yana Klimova and Marina Kirukhina</b>	Expert System for Identification of the Technical State of the Aircraft Engine TV3-117 in Flight Modes
3	<b>Sergiy Gnatyuk, Roman Odarchenko, Anastasiia Abakumova and Viktor Gnatyuk</b>	Security Key Indicators Assessment for Modern Cellular Networks
4	<b>Sergiy Yakovlev and Oleksii Kartashov</b>	System Analysis and Classification of Spatial Configurations
5	<b>Sergiy Yakovlev, Oksana Pichugina and Olga Yarovaya</b>	On Optimization Problems on the Polyhedral-Spherical Configurations with Their Properties
6	<b>Nataliia Kuzmenko and Ivan Ostroumov</b>	Performance Analysis of Positioning System by Navigational Aids in Three Dimensional Space

**TRACK 2: Computational Intelligence**

Academic Building #35,  
conference hall 120  
(14:00 – 17:00)

1	<b>Alexander Vlasenko, Olena Vynokurova, Nataliia Vlasenko and Yevgeniy Bodyanskiy</b>	An Enhancement of a Learning Procedure in Neuro-Fuzzy Model
2	<b>Viktor Khavalko and Andrew Khudyy</b>	Application of Neural Network Technologies for Information Protection in Real Time
3	<b>Vadym Kolisnichenko and Yaroslav Dorogy</b>	Unsupervised Pre-Training with Spiking Neural Networks in Semi-Supervised Learning
4	<b>Dmytro Tkachenko</b>	Human Action Recognition Using Fusion of Modern Deep Convolutional and Recurrent Neural Networks

5	<b>Myroslav Komar, Vitaliy Dorosh, Anatoliy Sachenko and Grygoriy Hladiy</b>	Deep Neural Network for Detection of Cyber Attacks
6	<b>Sergei Yelmanov and Yuriy Romanyshyn</b>	Image Enhancement in Automatic Mode by Piecewise NonLinear Contrast Stretching
<b>TRACK 3: Intelligent Computing Technologies</b> <b>TRACK 4: Data Science and Risk Management in Financial World</b>		
Academic Building #35, lecture hall 105 (14:00 – 17:00)		
1	<b>Sergiy Syrota, Viacheslav Liskin and Sergii Kopychko</b>	Information Technology Based on Chunk Approach for Ontology Driven E-learning Engine
2	<b>Oleksii Kovalenko and Taras Kovalenko</b>	Knowledge Model and Ontology for Security Services
3	<b>Vladimir Kosolapov and Oleksii Kovalenko</b>	Agent Based Modelling Support for Systems of Situational Management
4	<b>Mariana Petrova, Olena Sushchenko, Iryna Trunina and Nadiya Dekhtyar</b>	Big Data Tools in Processing Information from Open Sources
5	<b>Nataliia Kuznietsova and Petro Bidiuk</b>	Forecasting of Financial Risk Users' Outflow
6	<b>Natalia Prykhodko, Sergiy Prykhodko and Mykhaylo Vorona</b>	The Non-Linear Regression Model to Estimate the Part of NPLS in the Whole Loan Portfolio of Ukrainian Banks
7	<b>Alexander Bogomolov, Viktor Nevezhin and Liubov Chagovets</b>	Using Econometric Modeling in Likelihood Assessing of Investment Activity Risks
8	<b>Nataliia Kuznietsova, Marta Seebauer and Stanislav Zabielin</b>	Some Methods for Estimating Financial Risks in Banking

**11.10.2018**

**ORAL SESSIONS**

**TRACK 1: System Analysis of Complex Systems**

Academic Building #35,  
conference hall 001  
(10:00 – 13:00)

1	<b>Illia Savchenko</b>	Using Morphological Table Networks for Modeling Social Disaster Situations
2	<b>Yuriy Danyk and Valery Shestakov</b>	Increase in The Efficiency of Situational Control Systems by Forces and Means to Prevent from and Liquidate Crisis Situations
3	<b>Yaroslav Vykylyuk, Milan Radovanović and Petro Sydor</b>	Hurricane Forecasting Using by Parallel Calculations & Machine Learning
4	<b>Igor Sachuk, Sergij Bortnovskiy, Artem Artemenko, Alexander Kalyta, Pavlo Open'Ko and Vitalii Tiurin</b>	Recommendations for Practical Use of the Method of Planning of Exit of Compound Technical Objects into Repair During Operation According to State
5	<b>Tatjana Selivyorstova and Aleksandr Mikhalyov</b>	Analysis of Prediction Mathematical Models of Shrinkage Defects in Castings
6	<b>Pınar Kırcı and Ebru Aydınadağ Bayrak</b>	Fractal Analyzing of Active Earthquake Fault Data