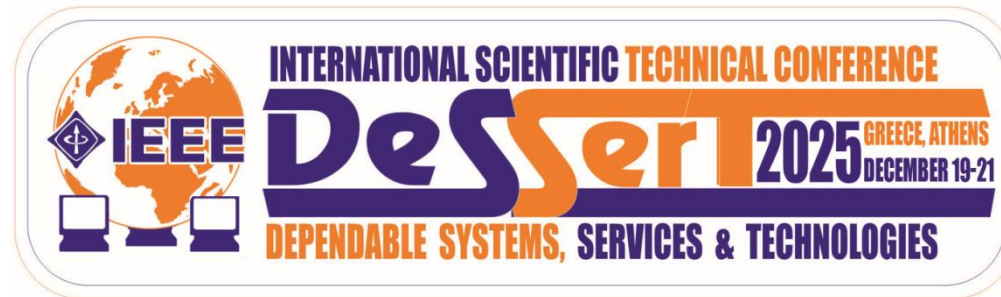


**National Aerospace University KhAI, Kharkiv, Ukraine
Hellenic Military Academy, Vary, Greece
University of Thessaly, Lamia, Greece
Leeds Beckett University, Leeds, UK
Lutsk National Technical University, Ukraine
IEEE Greece Section**



**15th Conference on
DEpendable Systems, SERvices and Technologies
(DESSERT2025)**

2025 Theme:

Trustworthy and Resilient AI Systems for a Safe and Secure World

**Athens, Greece
December 19-21, 2025**

**Timetable of the 15th International Conference
Dependable Systems, Services and Technologies, DESSERT2025, Athens, Greece, 19-21.12.25**

Time	December 19, Friday					Time	December 20, Saturday				Time	December 21, Sunday			
9.00	Testing of connection meet.google.com/www-accx-jzo														
9.30	Plenary Session PS 1 Welcome. Trustworthy Intelligent Autonomy of Cyber-Physical Systems (Dr. Yannick Fourastier, Technology Group Cyient, United Kingdom-France)					9.30	Plenary Session PS 3 Securing the AI Lifecycle: Trust-by-Design Approaches to Adversarial Threats (Prof. Christos Xenakis, University of Piraeus, Greece)				10.00	Plenary Session PS 5 Social systems theory perspective on information security risk modelling (Prof. Petra Haferkorn, Bonn-Rhein- Sieg University of Applied Science, Germany, Prof. Mariia Dorosh, Chernihiv Polytechnic National University, Ukraine)			
10.30	Coffee break					10.30	Coffee break				11.00	Coffee break			
10.45	S1.1 SS AIT-1 8, 22, 43, 49, 52	S1.2 SS DIP 16, 39, 42, 44, 45, 105	S1.3 WS EI4Safe 33, 34, 41, 48, 50, 76	S1.4 WS HMCCS-1 10, 11, 24, 56, 60	S1.5 WS Cyber Era WUD1 Z1, Z2, Z3, Z4,	10.45	S4.1 SS AMC-1 100, 113, 134, 133, 54, ZM	S4.2 SS FTR-1 5, 12, 73, 78, 93, 118	S4.3 SS ITN-1 20, 21, 26, 28, 47,	S4.4 WS WILDFIRE -RM-1 18, 29, 38, 61, 89	11.15	S7.1 SS IUV 4, 9, 14, 19, 69, 82	S7.2 SS WSM-2 68, 108, 102, 116	S7.3 Reserv. Session	S7.4 SS IDM-2 70, 91, 95, 99, 119
12.30	Coffee break					12.45	Coffee break				13.00	Coffee break			
13.30	S2.1 SS AIT-2 65, 80, 92, 98	S2.2 WS Edu PARTI-1 23, 40, 62, 83, 88	S2.3 WS AID3S2-1 6, 13, 15, 27, 46	S2.4 WS HMCCS-2 71, 72, 79, 84, 96	S2.5 WS Cyber Era Z5, Z6, Z7, Z8	14.00	Plenary Session 4 Deus Ex Machina: Emerging Opportunities and Perils in an Agentic World (Dr. Ioannis Agadakos, Montclair State University, USA)				14.00	Round Table Space Lykeion (Prof. Andrzej Rucinski, University of New Hampshire, USA)			

15.00	S3.1 SS AIT-3	S3.2 WS Edu PARTI-2	S3.3 WS AID3S2-2	S3.4 WS HMCCS-3	S3.5 WS Cyber Era WUD 2	14.45	S5.1 SS AMC-2	S5.2 SS FTR-2	S5.3 SS ITN-2	S5.4 WS WILDFIRE -RM-2	15.00 15.30	Plenary Session 6 Awards and Closing Ceremony
	103, 106, 110, 123	101, 114, 115, 121, 128	51 55, 57, 59, 64, 104	97, 107, 117, 131			2, 3, 37, 53, 85, 122	120, 124, 125, 127, F3	66, 74, 75, 81, 86	111, 151, 152, 153		
16.30	Coffee break					16.30	Coffee break					
16.45	Plenary Session 2 From Chip to Chain Reaction: Understanding Supply Chain Risk across System Scales (Dr Chris Spirito, Idaho National Laboratory Hacker, Sanctum Security, USA)					16.45	S6.1 SS AMC-3	S6.2 SS WSM-1	S6.3 SS ITN-3	S6.4 SS IDM-1		
17.45						18.15	130	35, 58, 63, 67	87, 90, 109, 126, 132	7, 17, 25, 32, 36		

Google Meet references:

Plenary Sessions 1-7, Round Table, and

Sessions 1.1 – 7.1 - <https://meet.google.com/www-accx-jzo>

Sessions 1.2 – 7.2 - <https://meet.google.com/ccp-pbro-fhy>

Sessions 1.3 – 7.3 - <https://meet.google.com/ggg-yosc-cvn>

Sessions 1.4 – 7.4 - <https://meet.google.com/ppp-qnan-vge>

Sessions 1.5 – 3.5 - <https://meet.google.com/ofa-bnxj-qpb>

Presentation timing: Invited speakers – 35minutes + 5 minutes Q&A, session talks – 15 minutes + 5 minutes Q&A.

Session 7.3 is reserved for missed reports

Plenary sessions	Plenary talks
<p>Plenary Session 1</p> <p><i>December 19th 2025, Friday</i> 09:30—10:30 https://meet.google.com/www-accx-jzo</p> <p>Moderator: Nikos Bardis</p>	<p>9:30 – 9:45 Welcome. Invitation of the DESSERT Organizers Prof. Giorgos Kaimakamis, Dean of Department of Military Sciences, Hellenic Army Academy Prof. Kakarountas Athanasios, University of Thessaly, Lamia, Greece Director of Department of Computer Science and Biomedical Informatics Prof. Oleksii Lytvynov, Acting Rector of National Aerospace University “Kharkiv Aviation Institute”</p> <p>9:45 – 9:55 Prof. Vyacheslav Kharchenko, National Aerospace University “Kharkiv Aviation Institute”, and Prof. Nikos Bardis, Hellenic Military Academy, Athens, Greece. <i>Trends of the DESSERT</i> <i>In memory of Dr Ted Kochanski</i></p> <p>9:55 – 10:30 Dr. Yannick Fourastier, Technology Group Cyient, United Kingdom-France <i>Trustworthy Intelligent Autonomy of Cyber-Physical Systems</i></p>
<p>Plenary Session 2</p> <p><i>December 19th 2025, Friday</i> 16:45—17:45 https://meet.google.com/www-accx-jzo</p> <p>Moderator: Vyacheslav Kharchenko</p>	<p>Dr. Chris Spirito, Idaho National Laboratory Hacker, Sanctum Security, USA <i>From Chip to Chain Reaction: Understanding Supply Chain Risk across System Scales</i></p>
<p>Plenary Session 3</p> <p><i>December 20th 2025, Saturday</i> 9:30—10:30 https://meet.google.com/www-accx-jzo</p> <p>Moderator: Nikos Doukas</p>	<p>Prof. Christos Xenakis, University of Piraeus, Greece <i>Securing the AI Lifecycle: Trust-by-Design Approaches to Adversarial Threats</i></p>

<p>Plenary Session 4</p> <p><i>December 20th 2025, Saturday</i> 14:00—14:45 https://meet.google.com/www-accx-jzo</p> <p>Moderator: Zlatogor Minchev</p>	<p>Dr. Ioannis Agadakos, Montclair State University, USA <i>Deus Ex Machina: Emerging Opportunities and Perils in an Agentic World</i></p>
<p>Plenary Session 5</p> <p><i>December 21th 2025, Sunday</i> 10:00—11:00 https://meet.google.com/www-accx-jzo</p> <p>Moderator: Eugene Babeshko</p>	<p>Prof. Petra Haferkorn, Bonn-Rhein-Sieg University of Applied Science, Germany, Prof. Mariia Dorosh, Chernihiv Polytechnic National University, Ukraine <i>Social systems theory perspective on information security risk modelling</i></p>
<p>Round Table</p> <p><i>December 21th 2025, Sunday</i> 14:00—15:00 https://meet.google.com/www-accx-jzo</p> <p>Moderator: Andrzej Rucinski</p>	<p>Prof. Andrzej Rucinski, University of New Hampshire, USA <i>Space Lykeion</i></p>
<p>Plenary Session 6</p> <p><i>December 21th 2025, Sunday</i> 10:00—11:00 https://meet.google.com/www-accx-jzo</p> <p>Moderators: Vyacheslav Kharchenko, Nikos Bardis</p>	<p><i>Awards and Closing Ceremony</i></p>

December 19th 2025

Sessions	Session papers
<p>S1.1 AI and LLM Trustworthiness, Explainable and Ethics</p> <p><i>December 19th 2025, Friday</i></p> <p>10:45—12:30 https://meet.google.com/www-accx-jzo</p> <p>Moderators: Kostiantyn Bokhan, Vic Grout, Jannie Fleur Oraño</p>	<p>8 Vic Grout Theory and Practice in AI Ethics: Models, Frameworks, Ideals, Attitudes and Obstacles</p> <p>22 Ioannis Agadakos Leveraging LLMs and Emulator-based Execution Traces for Binary Clone Detection</p> <p>43 Kostiantyn Bokhan, Mykyta Lapin, Kyrylo Perevoznyk, Yurii Parzhyn Graph-Based Representation of Contour Images: A Step Toward Self-Describing Explainable AI</p> <p>49 Oleksii Neretin, Vyacheslav Kharchenko, Yannick Fourastier Exploits for Assessing LLMs Vulnerabilities: Collecting and Risk Criticality Analysis</p> <p>52 Artur Yushchenko, Kirill Smelyakov, Zoia Dudar, Anastasiya Chupryna, Oleksandr Prokopenko Emotion-Guided Video Anomaly Detection Using Cross-Modal Fusion</p>
<p>S1.2 Dependable Radioelectronic Systems and Image Processing</p> <p><i>December 19th 2025, Friday</i></p> <p>10:45—12:30 https://meet.google.com/ccp-pbro-fhy</p> <p>Moderators: Boban Bondžulić, Iryna Vasylieva, Vladimir Lukin</p>	<p>16 Olga Dmytriyeva, Vira Huskova, Artem Khalyhov Block multi-step integrators with adaptive step for the numerical solution of stochastic dynamics problems</p> <p>39 Iryna Vasylieva, Vladimir Lukin, Viktor Makarichev, Andres Ramirez-Jaime, Gonzalo Arce, Krzysztof Okarma Prerequisites for Lossy Compression of Three-dimensional LiDAR Hyper-Height Datacubes</p> <p>42 Oleksandr Shportko, Andrii Bomba, Veronika Postolatii Modifications of the LZ77 Dictionary Algorithm with Encoding of Identical Sequences of Square Fragments of Image Pixels</p> <p>44 Boban Bondžulić, Dimitrije Bujaković, Vladimir Lukin, Bogdan Kovalenko VVC Compression of Noisy Three-Channel Images with No-Reference Metrics Analysis</p> <p>45 Dmytro Denysiuk, Pavlo Rehida, Mariia Kapustiana, Anatoliy Sachenko Detection of Steganography in Images by Analysing Patterns of Hidden Data Embedding</p> <p>105 Yevhenii Salii, Mykola Lavreniuk, Volodymyr Kuzin, Bohdan Yailymov, Nataliia Kussul, Andrii Shelestov, Zoltan Szantoi Cross-Modal Field Delineation: Evaluating RGB, Time-Series, and Radar Inputs with Delineate Anything Flow</p>

<p>S1.3 Workshop “Earth Intelligence for Safe and Resilient Recovery of Ukraine”</p> <p><i>December 19th 2025, Friday</i></p> <p>10:45—12:30 https://meet.google.com/gqg-yosc-cvn</p> <p>Moderators: Nataliia Kussul, Andrii Shelestov</p>	<p>33 Sofiia Drozd, Nataliia Kussul, Andrii Shelestov Geospatial Multi-Criteria AI-Driven Analysis of Rural Development in Ukraine during the War</p> <p>34 Sofiia Drozd, Nataliia Kussul Assessing the Potential of Sentinel-2 Embeddings for Improved Land Use Mapping: A Case Study in Saxony-Anhalt</p> <p>41 Lidiia Davybida Building Trustworthy Remote Sensing Competencies (Case of Radar Satellite Image Analysis Course for Educators in Ukraine)</p> <p>48 Andrii Kolotii, Andrii Shelestov Formalized model of critical information in corporate networks</p> <p>50 Bohdan Yailymov, Hanna Yailymova, Andrii Shelestov, Nataliia Kussul A Cloud-Based Workflow for Crop Type Classification Using Copernicus Sentinel-1/2 Data and Ensembles of Multi-Layer Perceptron</p> <p>76 Bohdan Yailymov, Liudmyla Pidgorodetska, Liudmyla Kolos, Oleh Fedorov, Hanna Yailymova Information technology for land cover ecological state assessment of southern Ukraine based on satellite data and cloud computing</p>
<p>S1.4 Workshop “Human-machine Cooperation in Critical Systems”</p> <p><i>December 19th 2025, Friday</i></p> <p>10:45—12:30 https://meet.google.com/ppp-qnan-vqe</p> <p>Moderators: Tetiana Shmelova, Volodymyr Zaslavskyi, Serge Dolgikh</p>	<p>10 Olga Malyeyeva, Yuriy Polupan, Maksym Kikot Modeling of logistics of supply and sales of military products under risk conditions</p> <p>11 Olha Pohudina, Nicola Cordeschi, Muhammad Nouman, Alessio Fascista Assessing Video Quality in Bridge Inspections with Unmanned Aerial Vehicles</p> <p>24 Tetiana Hovorushchenko Water level forecasting using machine learning: Case study of the Danube River</p> <p>56 Myroslava Khutorna, Natalia Pantielieieva, Yevhenii Laiske, Olena Goncharenko, Yuri Kamak, Svitlana Zaporozhets Reliability of Critical Systems as a Factor in Expanding the Combat Capabilities of Tactical Aviation</p> <p>60 Viktoriia Atamanchuk Micro-Credentials and AI-Driven Pilots as Catalysts of Science Education Transformation</p>

<p>S1.5 Workshop “Future Cybersecurity: Synergies, Triggers & Gaps Proactive Identification & Handling in the Digital Cognition Era”</p> <p><i>December 19th 2025, Friday</i></p> <p>11:45—12:30 https://meet.google.com/ofa-bnxj-qpb</p> <p>Moderators: Zlatogor Minchev, Max Kilger, Vyacheslav Kharchenko</p>	<p>Z1 Zlatogor Minchev Future Cybersecurity: Synergies, Triggers & Gaps Analysis in the Digital Cognition Era</p> <p>Z2 Stefan Tafkov Adaptive Recovery Model for Post-Malware and Ransomware Impact Reversal in Enterprise Systems</p> <p>Z3 Yulian Christov Cognitive NLP for Future Cyber Gaps Identification</p> <p>Z4 Nemanja Maček Alternative Approach to Biometric Recognition Systems</p> <p>WUD1 Zlatogor Minchev Wrap-Up Discussion “Future Cybersecurity: H-M Symbiotic Transcendents”</p>
<p>Coffee Break</p>	
<p>S2.1 AI and LLM Trustworthiness, Explainable and Ethics</p> <p><i>December 19th 2025, Friday</i></p> <p>13:30—15:00 https://meet.google.com/www-accx-jzo</p> <p>Moderators: Kostiantyn Bokhan, Vic Grout, Jannie Fleur Oraño</p>	<p>65 Serhii Chaikovskyyi, Natalia Kravets Explainable and Controlled Zero-Shot Image Generation in Data-Limited Domains: an Architectural Framework</p> <p>80 Nural Huliiev, Oleksii Oleksi Research on hyperparameter tuning methods for implementing the random forest algorithm based on medical and psychological data</p> <p>92 Rodion Bukhanevych, Andrii Shelestov Semantic segmentation under Limited availability of Labeled Data</p> <p>98 Petro Pekh, Oleksandr Frolov, Nataliia Khrystynets, Oleh Kaidyk, Sergij Grunjuk, Oksana Miskevich A Diffusion Model Framework for Text-Conditioned Image Synthesis with Embedded MQTT Communication</p>

<p>S2.2 Workshop “Educational Paradigms of Artificial Intelligence”</p> <p><i>December 19th 2025, Friday</i></p> <p>13:30—15:00 https://meet.google.com/ccc-pbro-fhy</p> <p>Moderators: Oleksandr Stryzhak, Olha Kuzmenko, Ilya Levin</p>	<p>23 Nataliia Cherniashchuk Application Of Neural Networks For Text And Symbol Information Identification</p> <p>40 Olha Kuzmenko, Vitaliy Prykhodniuk, Viacheslav Gorborukov, Oleksandr Stryzhak, Yevhenii Shapovalov Ontological Approach to AI-Driven Monitoring of Logistical Support of Educational Institutions</p> <p>62 Yevhen Bershchanskyi, Halyna Klym Comparative Analysis of AI GPT Foundation Models and their architectures</p> <p>83 Ia Motskobili, Darejan Geladze, Tsiuri Kurshubadze, Diana Akhvlediani, Volodymyr Zaslavskyi, Medea Kavtaradze Innovative Digital Technologies in Georgian and European Universities: Improving Teaching Quality, Engagement, and Digital Competencies</p> <p>88 Oleksandr Stryzhak, Andrii Yaremenko, Alla Stryzhak, Maksym Nadutenko Ontological Monitoring of Students Operational Activity</p>
<p>S2.3 Workshop “Securing the Future: AI-Driven Defense and Strategies for Dependable Systems”</p> <p><i>December 19th 2025, Friday</i></p> <p>13:30—15:00 https://meet.google.com/ggg-yosc-cvn</p> <p>Moderators: Anatoliy Sachenko, Sergii Lysenko, George Markovski</p>	<p>6 Mykhailo Bavdys, Oleksii Kushnir, Ivan Bolesta, Andrii Krupych Adaptive Multi-Cloud Orchestra Using Multi-Criterion Optimization And Machine Learning</p> <p>13 Andrii Nicheporuk, Maxim Prodeus, Nataliia Vozna Intelligent network intrusion detection system based on deep learning</p> <p>15 Nataliia Cherniashchuk Indicators Of Compromise As A Tool For Cyberattack Detection</p> <p>27 Viktor Kosheliuk Securing lightweight Kubernetes: A Focus on Vulnerability Audits</p> <p>46 Vitaliy Kobets, Dmitriy Klionov Intelligent AI-Driven Supply Chain Resilience: Agent-Based Modeling With Machine Learning Integration in Dynamic Environments</p>

<p>S2.4 Workshop “Human-machine Cooperation in Critical Systems”</p> <p><i>December 19th 2025, Friday</i></p> <p>13:30—15:00 https://meet.google.com/ppp-qnan-vqe</p> <p>Moderators: Tetiana Shmelova, Volodymyr Zaslavskyy, Serge Dolgikh</p>	<p>71 Tetiana Shmelova, Yurii Kovalyov, Maxim Yatsko, Yuliya Sikirda Cooperation in Training of Aviation Specialists “Collaborative Decision-Making – Education” (CDM-E) for Actions in Critical Situations</p> <p>72 Yuliya Averyanova, Yevheniia Znakovska Decision Support System based on enhanced SORA Risk assessment incorporating Wind Conditions and Multi-UAV Operation Scenarios</p> <p>79 Dmytro Krytskyi, Oleg Fedorovich, Elvira Kaidan, Mariia Pyvovar, Oleksandr Pidlisnyi, Oleksii Nikitchenko Using drone swarms for perimeter security</p> <p>84 Andriy Verlan, Wang Zhihai, Zhou YuHuai, Gao Xiaojin Cross-Domain Quality Assurance for Intelligent Energy Management Software Using Federated Learning</p> <p>96 Dmytro Vasyk, Vyacheslav Kharchenko FSM-Based Model of Reactive Context Control for LLM-Based Human-Machine Interaction</p>
<p>S2.5 Workshop “Future Cybersecurity: Synergies, Triggers & Gaps Proactive Identification & Handling in the Digital Cognition Era”</p> <p><i>December 19th 2025, Friday</i></p> <p>13:30—15:00 https://meet.google.com/ofa-bnxj-qpb</p> <p>Moderators: Zlatogor Minchev, Max Kilger, Vyacheslav Kharchenko</p>	<p>25 Stiliyan Georgiev From Vehicle Safety to Human Security: Driver Recognition and In-Cabin Health Detection in Intelligent Vehicles</p> <p>26 Max Kilger Research Methodologies for Understanding Future Cyber Threats from Human Factor Perspective</p> <p>27 Alexandru Georgescu Enhancing the Resilience of Critical Infrastructures in the New Cyber Environment</p> <p>28 Ali Sabra, Nehmeh Rmeiti Evaluating Bagging and Boosting Techniques for Application-Layer DDoS Detection: A Comparative Analysis of Random Forest, AdaBoost, and XGBoost</p>

<p>S3.1 AI and LLM Trustworthiness, Explainable and Ethics</p> <p><i>December 19th 2025, Friday</i></p> <p>15:00—16:30 https://meet.google.com/www-accx-jzo</p> <p>Moderators: Kostiantyn Bokhan, Vic Grout, Jannie Fleur Oraño</p>	<p>103 Vitaliy Bozhovskiy, Halyna Klym Hybrid LLM-Driven Framework for Reliable Mathematical Formula Synthesis and Deterministic Computation</p> <p>106 Jannie Fleur Oraño, Larmie Feliscuzo, Chris Jordan Aliac Augmenting YOLOv8 with Low-Rank Transformer Blocks for Marine Image Segmentation: A Lightweight Attention-Based Approach for Coral Reef Monitoring</p> <p>110 Evgeni Timachov, Volodymyr Zaslavskiy Component-Level Design of an Energy Efficient Wearable Edge-AI Device for Psychophysiological State Monitoring</p> <p>123 Anastasiia Kozakova, Dmytro Chumachenko Forecasting Syphilis Incidence Using Statistical and Machine Learning Methods: A Comparative Study</p>
<p>S3.2 Educational Paradigms of Artificial Intelligence</p> <p><i>December 19th 2025, Friday</i></p> <p>15:00—16:30 https://meet.google.com/ccp-pbro-fhy</p> <p>Moderators: Oleksandr Stryzhak, Mariia Dovha, Ilya Levin</p>	<p>101 Ibraim Didmanidze, Ia Khasaia, Nani Mamuladze, Nana Makaradze, Volodymyr Zaslavskiy, Marine Gurgenidze, Nato Sherozia STEM Education Challenges in Georgia (The Case of Basic and Secondary Levels of General Education)</p> <p>114 Neli Akhvlediani, Nino Samnidze, Ibraim Didmanidze, Zeinab Akhvlediani, Medea Diasamidze, Volodymyr Zaslavskiy The Discourse of Digital Aggression: Linguistic Strategies of Cyberbullying in Facebook Comments</p> <p>115 Yevhenii Shapovalov, Fabian Andruszkiewicz, Iryna Slipukhina, Stanislav Usenko, Mariia Dovha, Bohdan Duda, Viktor Shapovalov Measuring AI Efficiency: A Comprehensive Bibliometric and Systematic Review of Current Assessment</p> <p>121 Maksym Nadutenko, Margaryta Nadutenko, Alla Stryzhak Offline Local LLMs for Equity in Schools: DPIA-Driven Classroom Governance and a Minimal Qualitative Evidence Methodology for Pilots</p> <p>128 Gia Sirbiladze, Ketevan Sikharulidze A Fuzzy TOPSIS Based Collaborative Filtering Approach to a Talent Scout Recommender System</p>

<p>S3.3 Workshop “Securing the Future: AI-Driven Defense and Strategies for Dependable Systems”</p> <p><i>December 19th 2025, Friday</i></p> <p>15:00—16:30 https://meet.google.com/gqg-yosc-cvn</p> <p>Moderators: Anatoliy Sachenko, Sergii Lysenko, George Markovski</p>	<p>51 Bohdan Semenuik, Bohdan Savenko, Anatoliy Sachenko Adaptive Balanced Sampling Method for Computer Attack Detection on NSL-KDD</p> <p>55 Mariya Nazarkevych Accelerating deep learning on a multiprocessor system using dynamic batch size control</p> <p>57 Petro Vizhevskiy, Oleg Savenko Evolutionary Learning Framework for DLP Policy Adaptation in Drifting Environments</p> <p>59 Igor Golovko, Oleg Savenko Using AI Stacking Ensemble To Obfuscate .NET Code</p> <p>64 Andrii Grekhov AI-based Protection of UAV Communication Channels Against Adaptive AI Jamming Based on Q-Learning</p> <p>104 Yehor Oleinykov, Vyacheslav Kharchenko Cyber-Resilient Architecture for UAV Swarm Systems: Analysis of Threats, Vulnerabilities, and Multi-Layer Protection Strategies</p>
<p>S3.4 Workshop “Human-machine Cooperation in Critical Systems”</p> <p><i>December 19th 2025, Friday</i></p> <p>15:00—16:30 https://meet.google.com/ppp-qnan-vqe</p> <p>Moderators: Tetiana Shmelova, Volodymyr Zaslavskiy, Serge Dolgikh</p>	<p>97 Lesia Dubchak, Bohdan Derysh, Anatoliy Sachenko Hybrid UAV–SCADA Approach for Predictive Maintenance of Photovoltaic Power Plants</p> <p>107 Tetyana Nikitina, Vyacheslav Kharchenko, Mariya Chukhnova , Olga Morozova, Nataliia Filipenko, Serhii Lukashevych University Digital Twin Resilience Architecture with Human-Centric AI Decision Support</p> <p>117 Mykhailo Dombrovskiy, Ivan Pashchuk, Iryna Turchenko Foundations of Dependable and Self-Resilient Edge Computing Architectures Concept for Smart Grids</p> <p>131 Oksana Cheresnyuk, Oksana Desyatnyuk, Svitlana Sachenko, Ruslan Brukhanskyi, Halyna Liakhovych, Lesia Dubchak Fuzzy-multiple approach to assessing the reliability of energy infrastructure under wartime risks</p>

<p>S3.5 Workshop “Future Cybersecurity: Synergies, Triggers & Gaps Proactive Identification & Handling in the Digital Cognition Era”</p> <p><i>December 19th 2025, Friday</i></p> <p>15:00—16:30 https://meet.google.com/ofa-bnxj-qpb</p> <p>Moderators: Zlatogor Minchev, Max Kilger, Vyacheslav Kharchenko</p>	<p>WUD2 Max Kilger Wrap-Up Discussion “Smart Environment & Cybersecurity: H-M Joint Future”</p>
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December 20th 2025

Sessions	Session papers
<p>S4.1 Applied Mathematics and Intelligent computation</p> <p><i>December 20th 2025, Saturday</i></p> <p>10:45—12:45 https://meet.google.com/www-accx-jzo</p> <p>Moderators: Nikolaos Doukas, George Antoniu</p>	<p>100 Christian Leka, Stylianos Karagiannis, Dimitra Georgiou, Aggeliki Tsohou, Emmanouil Magkos, Christoforos Ntantogian Assessing Developer Security Practices in the WordPress Ecosystem</p> <p>113 Anatolii Banar, Heorhii Vorobets Experimental Evaluation of Machine Learning-Based Access Control in Resource-Constrained SDN</p> <p>134 OffLine</p> <p>133 OffLine</p> <p>54 Sotirios Spantideas, Anastasios Giannopoulos, Anastasios Kaltakis, Nicholas Assimakis, Panagiotis Trakadas D-Exit: A Decentralised Early Exit of Inference Framework for Swarm Systems</p>
<p>S4.2 Fault-tolerance and HW/SW reliability</p> <p><i>December 20th 2025, Saturday</i></p> <p>10:45—12:45 https://meet.google.com/ccp-pbro-fhy</p> <p>Moderators: Artem Perepelitsyn, Miroslav Kvassay, Oleksandr Vdovichenko</p>	<p>5 Alina Yanko, Victor Krasnobayev, Tetiana Fesenko The Method of Tabular Multiplication of Two Residues of Complex Numbers in Residuals Class</p> <p>12 Nina Kuchuk, Heorhii Kuchuk, Dmytro Lysytsia, Yuliia Andrusenko Adaptive selection of evolutionary algorithms for solving the load balancing problem of a multiprocessor computer system</p> <p>73 Ivan Ostroumov A Universal Architecture for Fault-Tolerant Multi-Sensor Data Fusion Using Binary Health Status Logic</p> <p>78 Ahmad Yusoff A Hardware Method to Improve SSD Repairability Using PCB-Based Interposer in Modern Laptops</p> <p>93 Artem Kachur, Sergii Lysenko, Olha Atamaniuk A Method for Synthesising Resilient AR/VR Architectures</p> <p>118 Artem Perepelitsyn, Vitalii Kulanov Method of Performance Improvement of Pipelined Processing in FPGA using BRAM-based FIFOs</p>

<p>S4.3 IoT and networks</p> <p><i>December 20th 2025, Saturday</i></p> <p><i>10:45—12:45</i> https://meet.google.com/ggg-yosc-cvn</p> <p>Moderators: Oleg Savenko, Nataliia Cherniashchuk, Andrii Topalov</p>	<p>20 Nataliia Cherniashchuk Personalized Recommendation Model In IoT Ecosystems</p> <p>21 Nataliia Cherniashchuk Methods Of Optimizing Voice Information Transmission In Computer Networks</p> <p>26 Tetiana Hovorushchenko Software and hardware complex for agroclimatic monitoring with an implemented artificial intelligence module</p> <p>28 Pavlo Oliinyk, Oleg Savenko, Anatoliy Sachenko Conceptual system’s architecture for assessing data security in corporate networks</p> <p>47 Oleksandr Huralnyk, Oleg Savenko Formalized model of critical information in corporate networks</p>
<p>S4.4 Workshop “Wildfire Residence Management: Challenges and Opportunities In The Digital Age”</p> <p><i>December 20th 2025, Saturday</i></p> <p><i>10:45—12:45</i> https://meet.google.com/ppp-qnan-vqe</p> <p>Moderators: Eugene Brezhniev, Fredrik Asplund</p>	<p>18 Kyrylo Polishchuk, Eugene Brezhniev Open-Source Multi-Agent Deep Reinforcement Learning for Autonomous UAV Navigation and Coordination Using ArduPilot Simulation Degradation</p> <p>29 Vadym Mishchuk, Herman Fesenko Utilizing Synthetic and Real Datasets of Explosive Ordnance for Training Object Detectors</p> <p>38 Kawkab Bouressace, Tamás Orosz Multi-Method Framework for Imputation and Outlier Detection to Improve Weather Data Integrity</p> <p>61 Bohdan Yailymov, Hanna Yailymova Ensemble Machine Learning Methods for Soil Moisture Data Downscaling</p> <p>89 Vladyslav Shevchuk, Halyna Klym, Taras Tkachuk Hardware-software complex for the study of meteorological data within a local area</p>
<p>Coffee Break</p>	

<p>S5.1 Applied Mathematics and Intelligent computation</p> <p><i>December 20th 2025, Saturday</i></p> <p>14:45—16:30 https://meet.google.com/www-accx-jzo</p> <p>Moderators: Nikolaos Doukas, George Antoniu</p>	<p>2 George Antoniou A New Viewpoint on the 2D Minimal State-Space Realization for Continued Fraction Filters</p> <p>3 George Antoniou On a 5D Papoulis structured state-space digital filter</p> <p>37 Panagiotis Maniatakos, Marilena Mitrouli Fast estimates for the diagonal of matrix inverse with applications</p> <p>53 Leonidas Chousos, Christos Koukouvinos Radial Control Chart: Reviewing and Assessing the Evolution of the Graphical Tool</p> <p>85 Petros Stavroulakis Evaluating the use of BiLSTM for sub-pixel target identification using hyperspectral data</p> <p>122 Oumayma Banouar Hyperparameter Prediction for High-Dimensional ℓ_p-ℓ_q Regression using Machine Learning</p>
<p>S5.2 Fault-tolerance and HW/SW reliability</p> <p><i>December 20th 2025, Saturday</i></p> <p>14:45—16:30 https://meet.google.com/ccp-pbro-fhy</p> <p>Moderators: Artem Perepelitsyn, Miroslav Kvassay, Oleksandr Vdovichenko</p>	<p>120 Artem Perepelitsyn, Alona Chepelevych, Andrii Litvinov Analysis of Technologies for Creation of Protected Online File Storage: Comparison of Solutions</p> <p>124 Artem Perepelitsyn, Artem Tetskyi Circuit of Passive Balancing of Li-ion Battery Pack for Autonomous Home Lighting</p> <p>125 Artem Perepelitsyn, Oleksandr Vdovichenko Analysis of Technological Capabilities for Creation of Reproducible Elements for Self-reconfiguring Modular Robots</p> <p>127 Miroslav Kvassay Computation of Structure Importance Measures Using Modular Decomposition and MPI</p>

<p>S5.3 IoT and networks</p> <p><i>December 20th 2025, Saturday</i></p> <p><i>14:45—16:30</i> https://meet.google.com/gqg-yosc-cvn</p> <p>Moderators: Oleg Savenko, Nataliia Cherniashchuk, Andrii Topalov</p>	<p>66 Petro Pekh, Nataliia Bahniuk, Taras Terletsyki, Svitlana Lavrenchuk, Kateryna Melnyk, Kateryna Bortnyk Simulation Algorithm for the Operation of an Automated Production Line Based on the Flow-Throw Method</p> <p>74 Pavlo Shtilman Ontology-Driven Algorithms for Risk Assessment and Adaptive Control in Wireless Sensor Networks</p> <p>75 Bohdan Chumachenko, Serhii Chumachenko, Dmytro Shvets, Maksym Zaliskyi, Yuliia Petrova, Ivan Yashanov Analysis of Mobility Influence on Route Stability in Wireless Networks</p> <p>81 Galyna Dolenko, Volodymyr Zaslavskyy, Dariia Manovytska, Mariia Petunina Information and Advisory System for Electric Vehicle Charging Infrastructure</p> <p>86 Serhiy Samsonov, Larysa Globa Multiprotocol Adaptive Transmitters in Constrained IoT Systems</p>
<p>S5.4 Workshop “Wildfire Residence Management: Challenges and Opportunities In The Digital Age”</p> <p><i>December 20th 2025, Saturday</i></p> <p><i>14:45—16:30</i> https://meet.google.com/ppp-qnan-vqe</p> <p>Moderators: Eugene Brezhniev, Fredrik Asplund</p>	<p>111 Andrii Shchur, Inna Skarga-Bandurova Regional AI Weather Forecasting: Architectural Trade-offs for Hazard-Relevant Short-Range Prediction</p> <p>151 Fredrik Asplund Wildfires as an Increasing Hybrid Threat due to Climate Change</p> <p>152 Pernilla Ulfvengren A data driven forestry system – a sociotechnical approach to mitigating fire risk</p> <p>153 Andrew Staniforth Skies the limit – Amplifying the use of aerial imagery for improved disaster resilience</p> <p>Discussion and closing remarks</p>
<p>Coffee Break</p>	

<p>S6.1 Applied Mathematics and Intelligent computation</p> <p><i>December 20th 2025, Saturday</i></p> <p>16:45—18:15 https://meet.google.com/www-accx-jzo</p> <p>Moderators: Nikolaos Doukas, George Antoniu</p>	<p>130 Ioannis Arkoudis, Stefania Zoi, George Halikias, Paraskevi Roupa Reconstruction of a perfectly conducting body in a chiral medium using a discretized RGF method</p>
<p>S6.2 Web, Cloud and Multi-agent Systems</p> <p><i>December 20th 2025, Saturday</i></p> <p>16:45—18:15 https://meet.google.com/ccp-pbro-fhy</p> <p>Moderators: Jozef Kostolny, Veronika Salgova</p>	<p>35 Oleksii Makieiev, Natalia Kravets Analysis of Fitness Functions For Evolutionary Web Application Architectures</p> <p>58 Igor Prokofiev, Oleg Savenko An Integral Integrity Model For Microservice Systems Based On Code-Quality Metrics</p> <p>63 Jozef Kostolny, Veronika Salgova, Sabina Kvietkova A Regression-Based Predictive Framework for the eBiomLab Platform</p> <p>67 Muhammad Taimoor Hassan Small Models, Large Impact: An SLM-Centric Playbook for Practical Agents</p>

<p>S6.3 IoT and networks</p> <p><i>December 20th 2025, Saturday</i></p> <p><i>16:45—18:15</i> https://meet.google.com/ggg-yosc-cvn</p> <p>Moderators: Oleg Savenko, Nataliia Cherniashchuk, Andrii Topalov</p>	<p>87 Mykhailo Poteichuk, Olena Surynovych, Andrii Yashchuk, Nataliia Lishchyna, Yulia Povstiana, Valerii Lishchyna Wireless Data Exchange System Using Cryptographic and Noise-Resistant Protocols and LoRa Technologies</p> <p>90 Petro Pekh, Nataliia Bahniuk, Taras Terletskyi, Svitlana Lavrenchuk, Kateryna Melnyk, Kateryna Bortnyk Study of the Simulation Model of an Automated Line Based on a B3-Type Optimal Design</p> <p>109 Nazar Omeliukh, Taras Tkachuk, Halyna Klym Hybrid IoT-Based Access Control System Using ALPR and RFID</p> <p>126 Andrii Shudryk, Bohdan Savenko Conceptual Framework for Enterprise Network Information Security System</p> <p>132 Andrii Topalov, Anatolii Rudnik, Oleksandr Klymenko, Andrii Shkitov, German Avdalov, Nataliia Odribets Security of Scada System Operation In Automated complexes</p>
<p>S6.4 Intelligent Monitoring and Diagnostics</p> <p><i>December 20th 2025, Saturday</i></p> <p><i>16:45—18:15</i> https://meet.google.com/ppp-qnan-vge</p> <p>Moderators: Tetiana Hovorushchenko, Halyna Klym, Ahmed-Reda Rhazi</p>	<p>7 Viktoriia Strilets, Dmytro Shevchenko, Viktoriia Dobriak Recurrent Neural Networks for Multivariate Time Series Prediction in Technical Diagnostics Tasks</p> <p>17 Tetiana Hovorushchenko Architectural Modeling of Information Technology for Recognizing the Artificial Cardiac Pacemaker Malfunctions</p> <p>25 Sachin Francis Reducing Build Time by Dynamic Optimization of UI Tests on Android</p> <p>32 Mykola Terletskyi, Grygoriy Zholtkevych Sequential Simulator for Distributed Systems</p> <p>36 Viktor Denysiuk, Yurii Lapchenko, Oleksandr Reshetylo, Oleksandr Povstyanoi, Vitalij Ptachenchuk, Volodymyr Symoniuk Installation for measurement of illumination</p>

December 21th 2025

Sessions	Session papers
<p>S7.1 Dependable and Intelligent UAV/UGV systems</p> <p><i>December 21th 2025, Sunday</i></p> <p>11:15—13:00 https://meet.google.com/www-accx-jzo</p> <p>Moderators: Kostiantyn Dergachov, Olha Korolova</p>	<p>4 Kostiantyn Dergachov, Oleksandr Aizatskyi, Kostiantyn Kulahin Efficient Object Detection for UAVs via Contour-Based Feature Extraction and Compact Neural Networks</p> <p>9 Dmytro Kucherov, Oleksandr Sliusarenko, Ignat Myroshnychenko, Olha Sushchenko Intelligent UAV Autopilot with Terrain Guidance</p> <p>14 Kostiantyn Dergachov, Oleksii Hurtovyi, Elshan Hashimov Automation of Visual Positioning of Unmanned Vehicles Based on an Adaptive Cascade Algorithm</p> <p>19 Tetiana Hovorushchenko Adaptive Guidance System for Unmanned Aerial Vehicles</p> <p>69 Stepan Simchenko Adaptive Reliability Modeling of UAV Swarms Using Binary-State System and Multi-State System under Uncertainty</p> <p>82 Olha Korolova Influence of Partial Communication and Sensor Factors on the Evaluation of Unmanned Ground Vehicle Complex Application Effectiveness</p>
<p>S7.2 Web, Cloud and Multi-agent Systems</p> <p><i>December 21th 2025, Sunday</i></p> <p>11:15—13:00 https://meet.google.com/ccp-pbro-fhy</p> <p>Moderators: Jozef Kostolny, Veronika Salgova</p>	<p>68 Muhammad Taimoor Hassan ScopeTags: Self-Knowledge Tokens for Reliable RAG</p> <p>108 Volodymyr Zaslavskyi, Omar Givradze, Ibraim Didmanidze, Zebur Beridze, Didar Didmanidze, Karapetyan Karapetyan Some properties of the semigroup $B_X(D)$ defined by semilattice of the class $\Sigma_2(X,5)$</p> <p>102 Halyna Klym, Oleksandr Stepanov Strategies for High-Performance WebAssembly Integration: a Quantitative Analysis of Architectural Patterns and Performance Trade-offs</p> <p>116 Larysa Lutay, Yevhenii Shapovalov, Viktor Shapovalov, Serhii Zharinov Modern Cris System For Ukriane</p>

<p>S7.3 Reserved Session</p> <p><i>December 21th 2025, Sunday</i></p> <p>11:15—13:00 https://meet.google.com/ggg-yosc-cvn</p> <p>Moderators: (TBC)</p>	
<p>S7.4 Intelligent Monitoring and Diagnostics</p> <p><i>December 21th 2025, Sunday</i></p> <p>11:15—13:00 https://meet.google.com/ppp-qnan-vqe</p> <p>Moderators: Tetiana Hovorushchenko, Halyna Klym, Ahmed-Reda Rhazi</p>	<p>70 Olena Surynovych, Natalia Bielikova, Lev Boiko, Iurii Lukianchuk, Nataliia Lishchyna, Andrii Yashchuk A mobile application featuring computer vision capabilities for gamifying periodic physical exercises among children and adolescents</p> <p>91 Ivan Rudavskyyi, Halyna Klym Air Quality Prediction Based on LSTM Model</p> <p>95 Ahmed-Reda Rhazi Cross-Project Software Defect Prediction Using Transfer Learning: A Systematic Review</p> <p>99 John Don Opina, Jannie Fleur Oraño, Jefferson Itaok, Eda Opina, Gordon Opina, Kenneth Karl Briones, Junjun Tahil, Romeo Opeña Jr AI-Driven Risk Prioritization Using YOLOv12 for Construction Site PPE Non-Compliance and Detection of Heavy Equipment and Vehicles</p> <p>119 Veronika Šalgová, Jozef Kostolny , Matej Juricek A Software Tool for Predicting Outcomes of Ophthalmic Surgeries</p>