1. Record Nr. UNISA996673178803316

Autore	Blasch Erik
Titolo	Dynamic Data Driven Applications Systems : 5th International Conference, DDDAS/Infosymbiotics for Reliable AI 2024, New Brunswick, NJ, USA, November 6–8, 2024, Proceedings / / edited by Erik Blasch, Frederica Darema, Dimitris Metaxas
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2026
ISBN	9783031948954
Edizione	[1st ed. 2026.]
Descrizione fisica	1 online resource (664 pages)
Collana	Lecture Notes in Computer Science, , 1611-3349 ; ; 15514
Altri autori (Persone)	DaremaFrederica MetaxasDimitris
Disciplina	003.3
Soggetti	Computer simulation Computers, Special purpose Quantitative research Dynamics Nonlinear theories Computer Modelling Special Purpose and Application-Based Systems Data Analysis and Big Data Applied Dynamical Systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	-- Introduction to the Proceedings. -- Introduction to the DDDAS2024 Conference Infosymbiotics/DDDAS and AI: Towards Reliable AI. -- Plenary Papers. -- Materials, Aerospace, and Geomechanics Systems Methods. -- Online Fault Detection for Metal Additive Manufacturing with Data- Driven Time Series Models. -- Weight Decay Optimized Unsupervised Autoencoder Based Anomaly Detection in Uncontrolled Dynamic Structural Health Monitoring. -- Novel Deep Learning Image Registration Techniques with Application to Microscopy Images of Metal Alloys. -- A Probabilistic Machine Learning Pipeline Using Topological Descriptors for Real-Time State Estimation of High-Rate Dynamic Systems. -- Information Fusion of Ultrasonic Waves and Low-

Frequency Vibrations: Leveraging Probabilistic Machine Learning and Stochastic Time Series Models for Structural Awareness. -- Earthen Embankment Monitoring using LiDAR data by Randomized Consensus of Topological Data Analysis. -- Environmental Systems-Assessment/Response, DT Methods. -- Large Language Models for Explainable Decisions in Dynamic Digital Twins. -- DDDAS Probability Learning for Natural Disaster Change Detection. -- Dynamic Data-Driven Digital Twin Testbed for Enhanced First Responder Training and Communication. -- A Dynamic Data Driven Agent Based Model for Characterizing the Space Utilization of Asian Elephants in Response to Water Availability. -- Adaptive Multi-stage Sensor Fusion under Neuro-symbolic Framework for The Multi-modal Ranging System in Adverse Weather Conditions. -- Towards a Dynamic Data Driven Al Regional Weather Forecast Model. -- Autonomous Uncrewed Aircraft for Mobile Operations in Severe Weather. -- Autonomous Planning for Targeted Observation of Severe Weather. -- Security Systems – Methods, infrastructures, applications. -- Dynamic Data Driven Security Framework for Industrial Control Networks using Programmable Switches. -- Security of RF Sensing and Imaging Systems in the Age of Digital Twins. -- CCTV-Gun: Benchmarking Handgun Detection in CCTV Images. -- D4: Dynamic Data-Driven Discovery of Adversarial Vehicle Maneuvers. -- Data Poisoning: An Overlooked Threat to Power Grid Resilience. -- GAN-Based Approach for Detecting Energy Deception Attacks in CPS. -- Adversarial Attacks and Data-Driven Dynamic Outlier Detection Systems. -- Utilizing Matrix Profile with the DDDAS Framework for Anomaly Detection in Nuclear Security. -- Development of an Edge Resilient ML Ensemble to Tolerate ICS Adversarial Attacks. -- Anomaly Detection Transformer: A Novel Approach for Time Series Analysis of Wearable Health Data. -- A Spiral-Theoretic Approach for Trustworthy Al/ML in DDDAS. -- Tracking Systems, Automation and Robotics. -- Data-Driven Pixel Control: Challenges and Prospects. -- Dynamic Data-Driven Approach for LEO PNT Selection of Satellites with Poorly Known Ephemerides. -- Improving Physics-based Motion and Physical Parameter Estimations of a Tumbling, Non-cooperative Space Object Through DDDAS. -- An Expected KLD Based Censoring Strategy for Target Tracking in Distributed Sensor Networks. -- Reliable Al for UAVs Through Control/Perception Co-Design. -- Constraint-Aware Diffusion Models for Trajectory Optimization. -- Data-Driven Dynamics of Robot Locomotion on Granular Media. -- Improving Physics-based Motion and Physical Parameter Estimations of a Tumbling, Non-cooperative Space Object Through DDDAS. -- A Physics-Enhanced Deep Learning Model for Fast Prediction of the Behavior of a Forced Dynamic System. -- Edge-to-Cloud Al-Assisted Augmented Reality for Robust and Real-time Assistance to Operators. -- CAD Model Guided Semantic Segmentation for Radar Micro-UAV Signature Synthesis Across Different Clutter Environments Transformer: A Novel Approach for Time Series Analysis of Wearable Health Data. -- Towards Reliable Neural Optimizers: A Permutation Equivariant Neural Approximation for Information Processing Applications. -- Fast Topological Data Analysis Feature for Nonstationary Time Series. -- Predictive Modeling of Application Runtime in Dragonfly Systems. -- Adaptive Data Driven Network Slicing and Resource Blocks Assignment using Deep Reinforcement Learning. -- Explainable Diffusion Model via Schroedinger Bridge in Multimodal Image Translation. -- Using Mamba for Modeling Dynamical Systems in a Limited Data Scenario. -- Application of a state space based neural network model for Uncertainty Propagation in dynamical systems. -- From Positive to

	Negative: On the Role of Negative Data in Enhancing Generative Models for Engineering Constraint Satisfaction.
Sommario/riassunto	This book constitutes the refereed proceedings of the 5th International Conference on Dynamic Data Driven Applications Systems, DDDAS/Infosymbiotics for Reliable AI 2024, held in New Brunswick, NJ, USA, during November 6–8, 2024. The 43 full papers included in this book were carefully reviewed and selected from 52 submissions. By combining DDDAS and typical AI approaches, the papers address state-of-the-art efforts to create frameworks for enabling new and advanced Science and Technology capabilities to address challenges and create opportunities in important areas, spanning a wide set of areas, such as: materials and aerospace systems; communications networks; energy infrastructures; cyber-security; adverse environmental situations; societal dynamics; computer vision; robotics; laboratory automation; bio-informatics and pharmaceuticals design; and more.