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## International Conference on Cyber Analytics and Information Retrieval

***Organized by***

***Sister Nivedita University (SNU), India***

*Technically Sponsored by:*

**Scientific Innovation Research Group (SIRG), Egypt**

**Scientific Research Group in Egypt (SRGE), Egypt**

**CI2S lab, Argentina**

**Date: 24th – 25th April 2025 (Hybrid Mode)**

##  \*\*\*\*\*\*\*\*\*\*\*\*\*\* CALL FOR PAPERS \*\*\*\*\*\*\*\*\*\*\*\*\*\*

 **SPECIAL SESSION**

AI-Powered Computer Vision for Enhanced Object Detection and Security

### SESSION ORGANIZERS:

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**SESSION DESCRIPTION:**

This special session will delve into the cutting-edge advancements in AI-powered computer vision techniques for enhancing object detection and security applications. With the rapid growth of AI and the increasing demand for robust security solutions, this session will explore innovative approaches, cutting-edge research, and real-world applications of AI-driven computer vision in object detection and security domains.

**KEY THEMES:**

* **Deep Learning for Object Detection in Healthcare and Security:**
	+ Exploring state-of-the-art deep learning architectures (e.g., CNNs, YOLO, Faster R-CNN) for object detection and their advancements.
	+ Addressing challenges in object detection such as small object detection, occlusion handling, and real-time performance.
* **AI for Video Surveillance and Security:**
	+ Developing intelligent video surveillance systems using AI for anomaly detection, intrusion detection, and behavior analysis.
	+ Utilizing AI for facial recognition, person re-identification, and crowd monitoring in security contexts.
* **AI-Powered Object Detection in Autonomous Systems:**
	+ Exploring the role of AI-powered object detection in autonomous vehicles, drones, and robotics for navigation, obstacle avoidance, and safety.
* **AI for Security in Smart Cities:**
	+ Investigating AI-driven solutions for intelligent traffic management, crime prevention, and public safety in smart city environments.
* **Ethical Considerations and Challenges:**
	+ Addressing ethical concerns related to privacy, bias, and fairness in AI-powered object detection and security systems.
	+ Discussing the challenges and limitations of current AI-powered object detection methods and potential solutions.

### RECOMMENDED TOPICS:

We invite original research papers, case studies, and position papers that address the following (but not limited to):

1. **AI-powered Computer Vision for Medical Image Analysis** (e.g., disease detection, tumor segmentation)
2. **Object Detection for Robotic-Assisted Surgery**
3. **AI-powered Computer Vision for Gait Analysis and Fall Detection in Healthcare**
4. **Anomaly Detection in Medical Images for Early Disease Diagnosis**
5. **Computer Vision for Personalized Medicine and Treatment Planning**
6. **Deep Learning Architectures for Object Detection in Challenging Environments**
7. **3D Object Detection and Tracking for Advanced Security Applications**
8. **Small Object Detection and Recognition in High-Resolution Imagery**
9. **Real-time Object Detection and Tracking for Edge Devices**
10. **Multi-object Tracking and Trajectory Analysis for Security Surveillance**
11. **Anomaly Detection and Event Recognition in Security Videos**
12. **Explainable AI for Object Detection in Security Systems**
13. **Adversarial Attacks and Defenses for Object Detection in Security Systems**
14. **Federated Learning for Privacy-Preserving Object Detection in Distributed Security Systems**
15. **AI-Powered Object Detection for Wildlife Monitoring and Conservation**
16. **Integration of Sensor Data with AI-Powered Object Detection**
17. **AI-Driven Object Detection for Smart Cities**
18. **Bias and Fairness in AI-Powered Object Detection Systems**
19. **The Role of Human-in-the-Loop in AI-Powered Object Detection Systems**
20. **The Ethical and Societal Implications of AI-Powered Object Detection and Security Systems**

### SUBMISSION GUIDELINES:

* All submissions must adhere to the conference's submission guidelines.
* Submissions will undergo a rigorous peer-review process.

**Expected Outcomes:**

This special session aims to:

* Bring together researchers, practitioners, and industry experts to discuss the latest advancements in AI-powered computer vision for object detection and security.
* Foster interdisciplinary collaboration and knowledge exchange among researchers from academia and industry.
* Identify emerging research challenges and opportunities in this area.
* Disseminate cutting-edge research findings and promote the adoption of AI-powered solutions for enhanced object detection and security.

### PUBLICATION AND SUBMISSION PROCEDURE

The conference aims at carrying out double-blind review process. The papers submitted by the authors will be assessed based on their technical suitability, the scope of work, plagiarism, novelty, clarity, completeness, relevance, significance, and research contribution. The conference proceedings will be published in AIP Web of Science, Scopus series.

**NOTE: While submitting the paper in this special session, please specify [AI-Powered Computer Vision for Enhanced Object Detection and Security] at the top (above paper title) of the first page of your paper.**

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