

# **2023 OkIP International Conference on Automated and Intelligent Systems (CAIS)**

**Monday, 2 October 2023 - Thursday, 5 October 2023**

**Tiako Center, Oklahoma City, OK, USA & Online**

## **Scientific Tracks**

## **AI, Machine Learning (ML), and Applications**

General ML | Active/Supervised Learning  
Clustering/Unsupervised Learning  
Online Learning | Learning to rank  
Reinforcement Learning | Deep Learning (DL)  
Semi/Self Supervised Learning  
Time Series Analysis | Prediction/Forecasting  
DL Architectures/Generative-Models  
Deep Reinforcement Learning  
Computational Learning Theory  
Bandit/Game/Statistical-Learning Theory  
Optimization Methods and Techniques  
Convex/Non-Convex Optimization  
Matrix/Tensor Methods  
Stochastic/Online Optimizations  
Non-Smooth/Composite Optimization  
Probabilistic Inference | Graphical Models  
Bayesian/Monte-Carlo Methods  
Trustworthy Machine Learning  
ML Accountability/Causality  
ML Fairness/Privacy/Robustness  
Healthcare/DNA/Transportation  
Digital-Economy | Ecommerce Security  
Sustainability | Energy | Green Technology  
Language | Image  
Recommendation Systems

## **Agent-based, Automated, and Distributed Supports**

Multi-Agent Systems | Software Agents  
Dialogue System | Conversational Agent  
Decentralized/Distributed Intelligence  
Context-Aware Computing  
Group Decision Support Systems  
Intelligent Structures/Networks  
Design/Automation Approaches  
Sensor Networks Architectures  
Complex Manufacturing Processes  
Analytical Models | Path Planning  
Multistage Assembly Line  
Automated Inspection  
Natural Language Processing

## **Natural Language Processing (NLP)**

Conversational Agents | Dialogue System  
Large Language Models | Grammatical Tagging  
Natural Language Generation/Toolkit  
Linguistic Morphology | Morphological Analysis

Morphemesx Characteristics  
Language Models and Smoothing  
Document/Topic Classification/Notation  
Sequence Labeling |Speech Tagging  
Named Entity Recognition  
Lexical Semantics | Word Embeddings  
Phrase Structure | Dependency Syntax  
Sentence Semantics | Speech Recognition  
Question Answering | Machine Translation  
Document Summarization | Sentiment analysis  
Co-Reference Resolution  
Word sense disambiguation  
NLP Tools/Approaches | Statistical NLP  
AI/Machine/Deep Learning Techniques for NPL  
Convolutional/Recurrent Neural Networks

## **Intelligent Systems and Applications**

Medical Nanorobotics |  
Sensory/Embedded Systems  
Embedded Systems | Digital Manufacturing  
Optimization/Evolutionary Algorithms  
Bioinformatics/Biotechnology Applications  
Computer-Vision Applications  
Sensor-Networks Applications  
Intelligent Design | Fuzzy Systems  
Soft/Ubiquitous Computing  
Pervasive/Wearable Computing  
Intelligence Manufacturing | Microsatellite  
Cyber-physical Systems | Kinematics

## **Knowledge-based and Control Supports**

Expert/Complex Systems  
Decision-Support Systems  
Intelligent Control/Supervision Systems  
Knowledge Engineering  
Neural Networks | Structural Optimization  
Intelligent Teleoperation  
Intelligent Shopfloor  
Collision Avoidance | Fault Diagnosis  
Object Detection and Tracking | Path Planning  
Position/Quality/Motion Control  
Predictive Control  
Preventive Maintenance | Defect Detection

## **Robotics and Vehicles**

Unmanned Vehicles/Robots  
Autonomous Vehicles/Robots

Human-Robot Interfaces  
Human-Robot Interactions  
Intelligent Telerobotics | Service Robots  
Robotic Manipulators/Arms  
Robotic Applications  
Self-Driving Vehicles | Cloud-based Driving  
Vehicular ad hoc Networks | Traffic Detection