IEEE CS ◆ IEEE

ICTAI

BAI FOUNDATION

37th International Conference on Tools with Artificial Intelligence
November 03-05, 2025, Athens, GREECE

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3. AI and Software Engineering
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The IEEE International Conference on Tools with Artificial Intelligence (ICTAI) has been a leading IEEE-CS annual scientific meeting for three decades. It provides a major international forum where the creation and exchange of ideas related to artificial intelligence are fostered among academia, industry, and government agencies. The conference facilitates the cross-fertilization of these ideas and promotes their transfer into practical tools, for developing intelligent systems and pursuing artificial intelligence applications. ICTAI encompasses all technical aspects of specifying, developing and evaluating the theoretical underpinnings and applied mechanisms of the AI-based components of computer tools such as algorithms, architectures and languages.

Topics (but not limited to)

AI Foundations
Evolutionary computing, Bayesian vs Fuzzy Neural Networks
Decision Theory and Decision Optimization
Search, SAT, and CSP
Logics and Ontologies

AI in Domain-specific Applications
Computational Biology, Medicine & Biomedicine
Web, Communication, Social Networking
Games and E-Commerce
Finance and Risk Management

AI in Methodologies and Systems
Intelligent Robotics, Computer Vision and Patterns Analysis-
Association & Understanding, Text Deep Analysis/Interpretation
Intelligent Software Engineering
Security, Data Privacy, and Information Assurance

AI in Data Analytics, Data Mining and Big Data
Visual Analytics for Big Data
Computational Modeling for Big Data
Large-scale Recommendation and Social Media Systems
Semantic-based Big Data Mining & Games

AI in Smart Cities
Healthcare, Traffic lights, Transportation, Environment, Energy.
Smart homes, Smart Neighborhoods, Smart Cities

AI in Large Scale Energy Systems
Nuclear, Wind, Water, other

AI Synergistic Models
Bridging AI Models for Advanced AI
Synergies of AI Tools

Machine Learning & Deep Learning
Dimension Reduction and Feature Selection
Learning Graphical Models and Complex Networks
Active, Cost-Sensitive, Semi-Supervised, Multi-Instance, Multi-Label and Multi-Task Learning
Transfer/Adaptive, Rational and Structured Learning
Preference/Ranking, Ensemble, and Reinforcement Learning
Learn continuous-Incremental Learning

Knowledge Representation, Reasoning, Cognition
Knowledge Representation and Reasoning
Knowledge Extraction, Management and Sharing
Case-based Reasoning and Knowledge-based Systems
Cognitive Modelling and Semantic Web

AI and Decision Systems
Decision Guidance and Support Systems
Systems AI based Optimization
Group, Distributed, and Collaborative Decisions
Crowd-sourcing and Collective Intelligence Decision-making
Strategic, Tactical and Operational-level Decisions

Uncertainty in AI
Uncertainty and Fuzziness Representation and Reasoning
Approximate/Exact Probabilistic Inference

Natural Language Processing
Natural Language Processing/Understanding
Large Language Models, Sentiment Analysis
Dialogue systems and digital assistants/chatbots

AI and Societal Impact
AI Fairness, Accountability and Transparency
AI interpretability and explainability Ethical and Trustworthy AI

Papers Submission
The submissions should contain original, high quality work, not submitted or published elsewhere. Papers should be submitted electronically in pdf format (through the ICTAI 2025 web site) and should conform to IEEE specifications (single-spaced, double-column, 10-point font size, up to 8 pages).

Papers Presentation
Each accepted paper should be presented by one of the authors and accompanied by at least one full registration fee payment to guarantee publication in the proceedings. All accepted papers (with payment) will be included in proceedings of ICTAI 2025, which will be published by the IEEE Computer Society.

Special Issues in IEEE & Int. Journals
Extended versions of selected papers from the conference will be reviewed and published in special issues in various IEEE and Int. Journals

Best ICTAI Papers Recognition Awards
ICTAI provide several financial awards to the top-5 best student papers and to the ICTAI Best Paper Award.

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Camera ready paper: Sept. 20, 2025