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Sponsored by: IEEE Industrial Electronics Society (IES)

Aim: The ETFA conference brings together experts from industry and academia to disseminate novel ideas and emerging trends, research results and practical achievements in the area of industrial and factory automation. The ultimate goal is fostering the development and adoption of scientific methods, models, and tools for the efficient design and operation of industrial and factory automation systems.


Technical Tracks


- Industrial Communication Technologies and Systems: Industrial Ethernet networks; Industrial wireless networks; Fieldbus networks; Factory and process automation networks; Automotive, train, and avionic networks; Home and building automation networks; Power-system automation networks; Smart grids and power-line communications; IP-based and web-based industrial communications; Integration and interoperability of automation networks; Middleware for industrial communications and decentralized control; Software-Defined Networks and cognitive radio networks; Wireless instrumentation and wireless sensor networks; Mesh, relay, and multi-hop industrial networks; Wireless coexistence, spectrum-sharing and radio resource management in industrial environments; Information security and functional safety in industrial communications; Industrial Internet of Things (IIoT); Machine-to-machine (M2M) communications; Communication technologies for Industry 4.0; Remote configuration and network management; Real-time communication and precise synchronization; Event-driven and time-triggered communications; Message schedulability analysis. Quality of Service (QoS) and performance.


- Automated Manufacturing Systems: Synthesis and Analysis Techniques; Performance Evaluation and reliability; Scheduling, Resource allocation; Optimization; Discrete Event Systems in Manufacturing Systems; Formal Modeling and Analysis of Manufacturing Systems; Fault Diagnosis, State-Estimation, and Identification, Networked Control of Manufacturing Systems; Planning and Distributed Control of Industrial Systems; Formal Methods and Verification Tools; Security Analysis and Privacy Enforcement; Discrete and Continuous Industrial Automation Systems; Automated Manufacturing Systems and Enterprise Integration; Application of Service-Oriented Technologies; Test Cases, Benchmarks and Tools; Application of AI and Machine Learning in Practice; Recent Developments in Standardization, intelligent Cyber-Physical Production Systems.

- Industrial Control: Process Monitoring and Control; Equipment Monitoring and Control; Supervisory Control; Intelligent Control; Fault Detection and Management; Process Modeling and Optimization; Control Performance Assessment; Industrial Internet of Things; Industrial Control Applications; Large-Scale Systems; Computer Implementation of Control Systems; Co-Design of Control; Computing and Communication; Co-Design of Diagnosis and Dependability; Safety Issues in Industrial Control; Environmental Implications of Control Systems.

- Computer Vision, Computational Intelligence, and Modern Heuristics in Automation: Computer vision systems in science, technology and industrial applications; Machine vision technology for flexible factory automation; Advanced visual perception systems, Intelligent Systems Control and Systems, Heuristics and meta-heuristics, Data Mining in Automation and Industrial Applications; Neuralfuzzy/Evolutionary approaches in automation; predictive, adaptive control, recognition, navigation, motion control, competitive, self-organizing learning and clustering; Computational intelligence for security, reliability, and fault-tolerance; Expert systems in automation; Hardware optimization based on computational intelligence techniques.

- Intelligent Robots & Systems: Navigation, Control and Manipulation for Intelligent Robots and Systems; Cognitive Robotics; Cooperative and Collaborative Robotics; Perception, Environment Description and Map Building; Human-Robot Interaction; Integrated Intelligence; Intelligent Robot Assistants; Intelligent Embedded Systems; Multi-Agent Systems and Distributed Robotics Architectures; Path Planning and Collision Avoidance; Sustainable Robotics and Applications; Robot Programming; Mobile Manipulation; Network Robotics; Training and Education in Industrial Robotics; Advanced Sensors and Vision Systems in Robotics; Robot Learning; Simulation and Models for Robotics; Advanced Applications of Autonomous Robots; Supervision; Planning and Failure Recovery.

- Intelligent Sensors, Sensor Networks, and Information Processing. Networked Sensing: Novel components, devices and architectures; Devices and protocols for the Internet of Things (IoT); Energy harvesting in sensor networks; Network and system architectures; Machine-to-Machine (M2M) communication; Security analysis and protocols; Communication protocols for sensor networks; Information Processing; Detection, classification, tracking, reasoning and decision making; Machine learning and AI; sensor data processing, data mining; (Distributed) Signal processing and data analytics; Sensor network modeling, simulation, measurements, and analysis; Network health monitoring, QoS management and dependability; Sensor tasking and actuation, wireless control and automation systems; Applications: Sensor network applications, deployment and case studies; Smart systems for production, optimization and green energy; home and building automation, smart factories, smart grid, healthcare.

- Complex Systems & Systems Engineering: Systems Engineering, Systems-of-Systems Engineering, Systems Architecture; Complex Systems; Structural and Dynamic Complexity; Cyber-Physical Systems; Cyber Security; Distributed Adaptive and Predictive Intelligent Real Time Feedback Systems; Cloud Computing & Manufacturing; Humans in the Loop; Modeling & Simulation; Model-Based Engineering Systems; Meta-modeling; Model Driven Integration & Interoperability; Systems Integration & Verification; Decision-making for Complex Systems; Scalability and Complexity Management; Modularity and Composability; Autonomous Systems; Fault Diagnosis; Prediction and Tolerance; Large-Scale Systems Integration; Diverse industrial application areas: factory and process automation, automotive applications, avionics, robotics, transportation systems, urban automation and systems, energy systems, health systems, military logistic systems, etc.

- New frontiers in Automation: Cyber-Physical Systems and Artificial Intelligence: Distributed Architectures for Adaptive Systems; Autonomous Cyber-Physical Systems; Networked Adaptive Systems; Self-Adaption and Self-Organization for Smart Factories, Smart Cities, Smart Health Systems, etc.; Energy, Intelligent Internet of Things, Human Sensor-Integration, AI-Powered Smart Interfaces; Learning and Self-Optimizing Cyber-Physical Systems; Machine Learning for Production; Deep Learning for Industrial Applications; Algorithms for Diagnosis and Repair; Automatic Adaptation; Planning and Scheduling.

Special Sessions: Special Sessions provide the opportunity to focus on particular emerging topics that are not covered in the conference’s main technical tracks and/or to stimulate in-depth discussions in special areas relevant to the conference theme. More details on the conference website.

Best Paper Award: Best paper awards in Factory Automation and Emerging Technologies will be presented at the conference banquet dinner.


Submission of Papers: The working language of the conference is English. Two types of submissions are solicited. Long Papers – limited to 8 double column pages in a font no smaller than 10-points. Work-in-Progress– limited to 4 double column pages in a font no smaller than 10-points. Manuscripts must be submitted electronically in PDF format, according to the instructions contained in the Conference website: http://ieeetfa2018.com

Paper Acceptance: Each accepted paper must be presented at the conference by one of the authors, otherwise the ETFA2018 Organizing Committee reserves the right to exclude a paper from the distribution after the conference at IEEE Xplore. The final manuscript must be accompanied by a registration form and a registration fee payment proof. All conference attendees must pay the conference registration fee and their travel, accommodation, and other personal expenses.

Author’s Schedule (NEW!!!):

**Regular and special sessions papers**

- Submission deadline: April 27, 2018
- Acceptance notification: June 1, 2018
- Final manuscripts deadline: July 6, 2018

**Work-in-progress papers**

- Submission deadline: June 11, 2018
- Acceptance notification: June 25, 2018
- Final manuscripts deadline: July 6, 2018