ETFA 2018
Call for Papers

Emerging Technologies
& Factory Automation

23 rd IEEE International Conference

September 4 - 7, 2018, Torino, Italy

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Sponsor (approved)

Sponsor (requested): *IEEE Council on Electronics Design Automation and IEEE Systems Council*

Aim: The aim of the conference is to bring together researchers and practitioners from the industry and academia and provide them with a platform to report on recent advances and developments in the newly emerging areas of technology, as well as actual and potential applications to industrial and factory automation.
Solicited Papers: Research papers reporting on new developments in technological sciences. Industry and development papers reporting on actual developments of technology, products, systems and solutions. Tutorial and survey papers. Work-in-progress papers. In addition, ETFA 2018 solicits special session proposals to stimulate in-depth discussions in special areas relevant to the conference theme. Please consult the conference web page for more details.

Topics within the scope of the conference include:
Information Technology in Automation: IT Modeling techniques (Object-Orientation, Components, Agents, Service Oriented Architectures,...) for Automation Systems; Model Driven Development in Automation (UML, SysML, ...); Data Modeling; Virtualization at the Factory Level, Digital Factory; Domain Specific Modeling and Programming Languages (IEC 61131, IEC 61499, ...); Integration with MES and ERP Systems (Databases, Semantic Web Services); Tool Chains, Platforms, and Frameworks for Software Design and Development; Security and Safety in Factory, Home and Building Automation; Network Integration in Automation Systems; Dynamically Reconfigurable, Adaptive, and Emergent Automation Software/Systems; Cost-Effective Automation/ Systems (Life-Cycle Cost); Case Studies, Application Reports and Experiences in Practice: Smart Manufacturing, Web-of-Things in the Factory Line; Home and Building Automation; Renewable Energy Systems (Production and Integration).
Industrial Communication Systems: Implementation Issues; Message Scheduling; Performance Analysis; Dependability and Fault Tolerance Aspects; System Design and Architecture; Self-Configurable Systems; Integration Support; Fieldbus Networks; Real-Time Ethernet Networks; Intranet and Internet; Wireless Networks; Hybrid (wired/wireless) Networks; Safety Buses; Sensor Networks; Automotive Networks; Building Automation Networks; Process Control Networks; Networked Control Systems.
Real-Time and (Networked) Embedded Systems: *Theory and Technology in RTNES*: Real-Ttime Computing; Real-Time Operating Systems; Real-Time Communications; Networked Embedded Systems Technology; Wireless Sensor Networks; Cyber Physical Systems. *Design and Methods in RTNES*: Design and Implementation; Design Methodologies and Tools; Components and Platforms; Models of Computation and Formal Methods; Hardware/Software Co- Design. Verification and Validation Methods. *Algorithms and Control in RTNES*: Energy Management; Data Integration and Fusion; Communication Modes; Quality of Service Control. *Case Studies in RTNES*: Industrial Automation, Automotive, Avionics, Communications and Building Automation Systems.
Automated Manufacturing Systems: Formal Modeling and Analysis of Manufacturing Systems; Scheduling, Simulation, Queuing Systems and Petri Nets; Synthesis and Analysis Techniques, Performance Evaluation and Reliability; Discrete and Continuous Industrial Automation Systems; Automated Manufacturing Systems and Enterprise Integration; Application of Service-Oriented Technologies; Benchmarks and Tools; Applications and Experiences in Practice; Recent Developments in Standardization; Resource Allocation Systems in Manufacturing; Fault Diagnosis, State-Estimation and Identification.
Industrial Control: Process Control; Equipment Control; Intelligent Control; Supervisory Control; Industrial Control Implementation; Discrete and Continuous Automation System; Equipment and Process Monitoring; Fault Detection and Management; Process Modelling and Optimization; Performance Assessment of Control Systems; Control Applications; Large-Scale 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; Intelligent Systems and Control, Modern Heuristics, and Data Mining in Automation and Industrial Applications; Neural/Fuzzy/Evolutionary approaches in automation; Modern heuristics methods in factory automation based on predictive, adaptive control, recognition, navigation, motion control, competitive, self-organizing learning, and clustering; Computational intelligence in security, reliability, and fault-tolerance in automation; Ant colonies optimization and swarm intelligence in automation; Automotive intelligent systems; Expert systems in automation; Hardware optimization based on computational intelligence techniques; Expert systems for industrial applications.
Intelligent Robots & Systems: Cognitive Robotics; Cooperative and Collaborative Robotics; Multi-Agent Systems and Distributed Robotics Architectures; Human-Robot Interaction; Integrated Intelligence; Intelligent Robot Assistants; Intelligent Embedded Systems; Robot Programming; Natural Language Grounding; Path Planning and Collision Avoidance; Navigation, Control and Manipulation for Intelligent Robots and Systems; Perception, Environment Description and Map Building; Mobile Manipulation; Planning and Failure Recovery; Network Robotics; Reasoning under Uncertainty; Robot Learning; Advanced Sensors and Vision Systems in Robotics; Usability Studies.
Intelligent Sensors, Sensor Networks, and Information Processing: Novel components, devices and architectures for networked sensing; Network and system architectures and protocols; Network health monitoring and management; Detection, classification, tracking, reasoning, and decision making; Sensor data processing, mining, and machine learning; (distributed) signal processing; Energy harvested systems; Sensor tasking, control, and actuation; Innovative applications and deployment experiences; System modeling, simulation, measurements, and analysis.
Complex Engineering Systems & Systems Engineering: Systems Engineering, Engineering Systems-of-Systems, Systems Architecture , Complex Systems, Cyber Physical Systems, Cyber Security, Cloud Computing & Manufacturing, Modeling & Simulation, Model-Based Systems Engineering, Metamodeling, Model Driven Integration & Interoperability, Systems Engineering Theory, Systems Integration & Verification, Decision-making for Complex Systems, Autonomous Systems, Large-Scale Systems Integration. Diverse industrial application areas: factory and process automation, automotive applications, avionics, transportation systems, urban automation and systems, energy systems, health systems, military logistic systems, etc.
Cyber-Physical Systems & Smart Networked Systems: Distributed Architectures for Adaptive Systems; Autonomous Cyber-Physical Systems; Self-Adaption and Self-Organization for Smart Factories, Smart Cities, Smart Buildings and Smart Energy; Learning and Self-Optimizing Cyber-Physical Systems.

Conference Format: The conference will comprise multi-track sessions for regular papers, to present significant and novel research results with a prospect for a tangible impact on the research area and potential implementations; work-in-progress (WIP) sessions; panel discussions on the state-of-the-art and emerging trends, involving leading experts from industry and academia; and public discussion sessions moderated by leading experts in the field of industrial automation systems.
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 and Industry practice – 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 web site.
Best Paper Award: Best paper awards in Factory Automation and Emerging Technologies will be presented at the conference banquet dinner.
Further Information: ETFA2018 Conference Secretariat: **contact@etfa2018.com**
Paper Acceptance: Each accepted paper must be presented at the conference by one of the authors. The final manuscript must be accompanied by a registration form and a registration fee payment proof. All conference attendees, including authors and session chairpersons, must pay the conference registration fee, and their travel expenses.
No-show Policy: The ETFA2018 Organizing Committee reserves the right to exclude a paper from distribution after the conference at IEEE Xplore if the paper is not presented at the conference.

http://www.etfa2018.com

Author's Schedule:

Regular and special sessions papers		***Work-in-progress/ Industry practice papers***	
Submission deadline	May 6, 2018	*Submission deadline:*	June 10, 2018
Acceptance notification	June 3, 2018	*Acceptance notification:*	June 24, 2018
Deadline for final manuscripts	June 24, 2018	*Deadline for final manuscripts:*	July 7, 2018