

SNPD 2019 Special Sessions

Special Session 1: Practical Experience in Software Engineering

The aim of the session is to give chance to exchange practical experience in software engineering.

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Special Session 2: Signal Sensing and Processing in Automation Engineering

In the scope of industrialization, automation is a big step beyond mechanization. Applying signal processing technology to the signal sensing and processing may provide a good solution in complex automation systems. With the big advancement of software engineering, signal processing in computing can resolve more complex problems in such as automation, robotics, mechatronics and control systems, etc. This session welcomes the contributions in theory, simulation, modeling, and practical applications in signal sensing, measurement, collection, analysis, processing, control in all automation engineering fields.

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Special Session 3: Analysis, Evaluation, and Usage of Web Information, System Behaviors, and Human Actions

Advances of information and communication technologies have brought tremendous benefits to us. Various kinds of information are available on the Web and the amount of data is growing very rapidly. It becomes very difficult to manage such data for computer systems and human beings. This special session focuses on information, systems, and humans on the web. It aims to clarify the relations and interactions among them through analysis and evaluation, and to find better system behaviors and human actions for increasing the benefits of web information.

Topics of interest include, but are not limited to:

- Internet Applications & Performances
- Web Information Processing
- Information Retrieval and Recommendation
- Multimedia Data Analysis and Processing
- Behavior, Action and Timeseries Processing
- Affective Computing
- Positive Computing
- Emotional and Facial Expressions
- Database and Data Warehousing Systems
- Data Mining and Knowledge Discovery
- Knowledge Management and Decision Making
- Human Computer Interaction
- Cloud Computing
- Big Data Management and Analysis
- High Performance Computing
- Mobile and Ubiquitous Computing
- E-Commerce, E-Government, and E-Learning
- Information Security, Integrity, and Reliability
- Systems and Software Engineering
- Bioinformatics

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Special Session 4: Information Technology, Business Model and Policy for Fourth Industrial Revolution

The fourth industrial revolution is the current and developing environment in which disruptive technologies and trends such as the Internet of Things (IoT), robotics, virtual reality (VR) and artificial intelligence (AI) are changing the way we live and work. The proposed special session aims at discussing the technological driver behind the Fourth Industrial Revolution, and evaluating impacts of the Fourth Industrial Revolution on global industrial, economic, and social development. The Session covers a wide range of fields from Information Technology Business Model and Policy.

Topics of interest include, but are not limited to:

- Service and Platforms of Artificial Intelligence
- FinTech relevant Technologies(Security, Robo-Advisor, BlockChain, etc.)
- Systems for VR(Virtual Reality), AR(Augmented Reality) and MR(Mixed Reality)

- Technologies and Business with Open Source Software
- Innovative Business Modeling

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Special Session 5: Organization of Innovative Computer System for Large-scale and Flexible Computing

Parallel and distributed computing are now becoming popular techniques for processing large-scale data set.

This special session aims at exploring innovative computer system designs suitable for such advanced computing. The session covers a wide range of research fields from hardware to software and focuses on the following aspects of the system: performance, scalability, flexibility, availability, fault-tolerance, and security.

Topics of interest include, but are not limited to:

- Parallel and Distributed Computer Architectures
- Parallel and Distributed Storage Systems
- Parallel and Distributed Algorithms
- Parallel and Distributed I/O Systems
- Network Architectures for Parallel and Distributed Computing
- Network and Distributed Systems Security
- Reconfigurable Systems
- Fault-Tolerant Systems
- Architectural Support for Machine Learning
- Network and Distributed Systems Operation Technology

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Special Session 6: Cultural Technology and ICT Convergence

The evolution of 5G is an inevitable era, and world telecom and device companies are working to preempt global technology standardization. The evolution to 5G is essential for the execution of services that require large amounts of real-time data processing for realistic service as well as intelligent services. This is expected to have a great impact on the field of cultural technology such as cultural content planning and commercialization, media mounting, and value chain process of delivery. This session will cover the technology, contents, applications and so on for the era of 5G.

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Special Session 7: Systems and Services with/for Data-Intensive Approach

The emerging technologies of IoT, BigData, and Cloud Computing enable data-intensive approaches to real-life challenges. In modern software systems and services, the data is extensively used for monitoring, operation, and prediction, achieved by sophisticated algorithms of data processing, context reasoning, and machine learning. This special session aims to bring together researchers, professors and practitioners who are working for such data-intensive approach to implement smart software systems and services. The session welcomes papers related to software systems and services using any data-intensive approach. We also welcome fundamental technologies for achieving the data-intensive approach, The following topics are relevant to the special session, but are not exclusive of other relevant issues.

- Development of Data-Intensive Systems and Services
- Software Engineering for Data-Intensive Systems
- Data-Intensive Engineering
- Data-Mining, Cleansing, Processing for Data-Intensive Systems
- IoT, CPS, and Smart Systems
- Usage and Integration of Open Data
- APIs with/for Data-Intensive Approach
- Domain-Specific Machine-Learning Theories and Applications
- Education of Data-Intensive Systems

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(To be added)

Workshop 1: Theory and Practice of Spontaneous Software Evolution

Spontaneous software evolution is a new type of software evolution, where the evolution is triggered spontaneously by individual developers. Compared to the conventional approaches, the spontaneous software evolution could achieve more creative evolution of the software project, since the new idea is proposed in a bottom-up manner. Also, the emerging social coding platforms (e.g., GitHub) realize the pragmatic environment for the spontaneous software evolution. On the other hand, there are many issues to be addressed, for example,

How to achieve the governance of project?
How to reduce the expected social overhead?
How to foster an active and sustainable community?

In this workshop, we offer an opportunity where researchers and practitioners discuss theory and practice relevant to the spontaneous software evolution. The topics include, but are not limited to:

Modeling, requirement of spontaneous software evolution
Project management, execution of spontaneous software evolution
Assessment, evaluation, metrics for spontaneous software evolution
Incentive, mechanism designs for spontaneous software evolution
Coding, review, coding, testing for spontaneous software evolution
Bot, agent, automation for spontaneous software evolution

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