Call for Contributions

http://icpe2019.spec.org/

@ICPEconf

ICPE brings together researchers and practitioners to report state-of-the-art and in-progress research on performance engineering of software and systems, including performance measurement, modeling, benchmark design, and run-time performance management. The focus is both on classical metrics such as response time, throughput, resource utilization, and (energy) efficiency, as well as on the relationship of such metrics to other system properties including but not limited to scalability, elasticity, availability, reliability, cost, sustainability, security and privacy. This year's main theme is "performance engineering in the Artificial Intelligence era." We are looking for contributions that use AI techniques to enhance the performance modeling, estimation, and optimization of complex systems. At the same time we are looking for contributions that analyze and improve AI systems.

Important Dates

Research and industrial/experience abstracts submission:	Oct 13, 2018	Work-in-progress/vision papers submission:	Jan 11, 2019
Research and industrial/experience papers submission:	Oct 15, 2018	Work-in-progress/vision paper notification:	Feb 08, 2019
Research and industrial/experience paper notification:	Dec 07, 2018	Work-in-progress/Camera-ready:	Feb 22, 2019
Research and industrial/experience paper Camera-ready:	Feb 15, 2019	Poster/demo submission:	Jan 14, 2019
Artifact Registration:	Dec 14, 2018	Poster/demo notification:	Jan 28, 2019
Artifact Submission:	Dec 22, 2018	Poster/demo Camera-ready:	Feb 15, 2019
Artifact Notification:	Feb 08, 2019	Workshop Proposals submission:	Oct 12, 2018
Tutorial proposals submission:	Jan 14, 2019	Workshop Proposals Notification:	Oct 29, 2018
Tutorial proposals notification:	Jan 28, 2019		

Topics of Interest (detailed on the next page)

- Performance modeling of software
- Performance and software development processes/paradigms
- Performance measurement, monitoring, and analysis
- Benchmarking
- Run-time performance management
- Power and performance, energy efficiency
- Performance modeling and evaluation in different environments and application domains
- All other topics related to performance of software and systems

Organizing Committee

General Chairs	Antinisca Di Marco, University of L'Aquila, Italy Varsha Apte, IIT Bombay, India	**Awards Chairs**	André van Hoorn, U Of Stuttgart, Germany Tilmann Rabl, TU Berlin, Germany
Research Program Chairs	Marin Litoiu, York University, Canada José Merseguer, Universidad de Zaragoza, Spain	**Workshop Chairs**	Davide Arcelli, University of L'Aquila, Italy Elena Gómez-Martínez, UAM, Spain
Industry Program Chair	David Schmidt, HPE, USA	**Finance Chair**	Manoj Nambiar, TCS Research, India
Posters & Demos Chair	Tadashi Dohi, Hiroshima University, Japan	**Web Chair**	Joydeep Mukherjee, York University, Canada
Artifact Evaluation Chairs	Matthew Forshaw, Newcastle, UK Meikel Poess, Oracle, USA	**Publications Chair**	Philipp Leitner, University of Gothenburg, Sweden
Tutorials Chair	Radu Calinescu, University of York, UK Enrico Vicario, University of Florence, Italy	**Social Media Chair**	Vipul Mathur, Peritus AI, India
Work in Progress and Vision Track Chair	Huaming Wu, Tianjin University, China Mirco Tribastone, IMT Lucca, Italy	**Publicity Chair**	Abhay Pendse, Persistent Systems, India Ana Lucia Varbanescu, UofA, Netherland Nikolas Herbst, UofW, Germany
Registration Chair	Rupinder Virk, TCS, India	**Local Arrangements Chair**	Shruti Kunde, TCS Research, India

Topics of Interest (detailed)

Performance modeling of software
* Languages and ontologies
* Methods and tools
* Relationship/integration/tradeoffs with other QoS attributes
* Analytical, simulation and statistical modeling methodologies
* Machine learning and neural networks
* Model validation and calibration techniques
* Automatic model extraction
* Performance modeling and analysis tools

Performance and software development processes/paradigms
* Software performance patterns and anti-patterns
* Software/performance tool interoperability (models and data interchange formats)
* Performance-oriented design, implementation and configuration management
* Software Performance Engineering and Model-Driven Development
* Gathering, interpreting and exploiting software performance annotations and data
* System sizing and capacity planning techniques
* (Model-driven) Performance requirements engineering
* Relationship between performance and architecture
* Collaboration of development and operation (DevOps) for performance
* Performance and agile methods
* Performance in Service-Oriented Architectures (SOA)
* Performance of microservice architectures and containers
* DevOps and Performance

Performance measurement, monitoring and analysis
* Performance measurement and monitoring techniques
* Analysis of measured application performance data
* Application tracing and profiling
* Workload characterization techniques
* Experimental design
* Tools for performance testing, measurement, profiling and tuning

Benchmarking
* Performance metrics and benchmark suites
* Benchmarking methodologies
* Development of parameterizable, flexible benchmarks
* Benchmark workloads and scenarios
* Use of benchmarks in industry and academia

All other topics related to performance of software and systems.

Run-time performance management and adaptation
* Machine learning and runtime performance decisions
* Context modeling and analysis
* Runtime model estimation
* Use of models at run-time
* Online performance prediction
* Autonomic resource management
* Utility-based optimization
* Capacity management

Power and performance, energy efficiency
* Power consumption models and management techniques
* Tradeoffs between performance and energy efficiency
* Performance-driven resource and power management

Performance modeling and evaluation in different environments and application domains
* Web-based systems, e-business, Web services
* Big data systems and data analytics
* Deep-learning systems systems
* Internet of Things
* Social networks
* Cyber-physical systems
* Industrial Internet (Industry 4.0)
* Blockchain
* Virtualization and cloud computing
* Autonomous/adaptive systems
* Transaction-oriented systems
* Communication networks
* Parallel and distributed systems
* Embedded systems
* Multi-core systems
* Cluster and grid computing environments
* High performance computing
* Event-based systems
* Real-time and multimedia systems
* Low-latency systems
* Peer-to-peer, mobile and wireless systems

Program Committee

Jose Nelson Amaral, University of Alberta, Canada
Cristiana Amza, University of Toronto, Canada
Alberto Avritzer, EsulabSolutions, Inc., USA
Steffen Becker, University of Stuttgart, Germany
Umesh Bellur, IIT Bombay, India
Simona Bernardi, Universidad de Zaragoza, Spain
Cor-Paul Bezemer, University of Alberta, Canada
Andre Bondi, Software Performance and Scalability Consulting LLC, USA
Radu Calinescu, University of York, UK
Lucy Cherkasova, ARM Research, USA
Vittorio Cortellessa, University of L'Aquila, Italy
Vittoria De Nitto Personé, University of Rome Tor Vergata, Italy
Tadashi Dohi, Hiroshima University, Japan
Hamoun Ghanbari, Amazon, Canada
Abel Gómez, Universitat Oberta de Catalunya, Spain
Wilhelm Hasselbring, Kiel University, Germany
Andre van Hoorn, University of Stuttgart, Germany
Alexandru Iosup, TU Delft, The Netherlands
Zhen Ming Jack Jiang, York University, Canada
Evangelia Kalyvianaki, University of Cambridge, UK
Hamzeh Khazaei, University of Alberta, Canada
Samuel Kounev, University of Würzburg, Germany
Anne Koziolek, Karlsruhe Institute of Technology, Germany
Xiaoyun Zhu, Cloudera, USA
Diwakar Krishnamurthy, University of Calgary, Canada
Patrick P. C. Lee, The CU of Hong Kong, Hong Kong
Jim Zhanwen Li, AUSTRAC, Australia
Yan Liu, Concordia University, Canada
Catalina M. Lladó, Universitat Illes Balears, Spain
Andrea Marin, University of Venice, Italy
Stefano Marrone, University Campania "Luigi Vanvitelli", Italy
Daniel Menasce, George Mason University, USA
Ningfang Mi, Northeastern University, USA
Raffaela Mirandola, Politecnico di Milano, Italy
John Murphy, University College Dublin, Ireland
Juan F. Perez, Universidad del Rosario, Colombia
Diego Perez-Palacin, Linnaeus University, Sweden
Dorina Petriu, Carleton University, Canada
Evgenia Smirni, College of William and Mary, USA
Mark Stoodley, IBM, Canada
Nigel Thomas, Newcastle University, UK
Mirco Tribastone, IMT Lucca, Italy
Catia Trubiani, Gran Sasso Science Institute, Italy
Petr Tuma, Charles University, Czech Republic
Ana Lucia Varbanescu, University of Amsterdam, The Netherlands
Enrico Vicario, University of Florence, Italy
Murray Woodside, Carleton University, Canada
Huaming Wu, Tianjin University, China
Feng Yan, University of Nevada, Reno, USA