42ND INTERNATIONAL CONVENTION MIPRO

GRAND HOTEL ADRIATIC CONGRESS CENTRE & REMISENS HOTEL ADMIRAL, OPATIJA, CROATIA

mipro 2019

20 - 24 MAY 2019

WORKSHOP WS4

DATAFLOW SUPERCOMPUTING FOR BIGDATA DEEPANALYTICS

21 May 2019

ABOUT

This workshop presents the DataFlow SuperComputing paradigm, defines its advantages and sheds light on the related programming model with hands-on coding experience. DataFlow computers, compared to ControlFlow computers, offer speedups of 20 to 200 (even 2000 for some applications), and power and size reductions of up to 1/20. However, the programming paradigm is different, and has to be studied. The workshop explains the paradigm of programming in space, using Maxeler (a provider of multiscale dataflow computing systems) as an example, and gives an overview of ongoing research in the field. Examples include Data Engineering, Image Processing, Deep Learning, Financial Analytics, GeoPhysics, Genomics, etc.

EXPECTED OUTCOMES

Deep understanding of the dataflow paradigm, ability to use dataflow accelerators, mastering the dataflow programming model, and acquiring a strong hands-on experience.

TARGET AUDIENCE

The workshop is intended for students and researchers who want to learn know-how needed for the mastering of the dataflow programming model and the related technology that Intel describes in the Intel patent (US20180189063A1) about the next generation Intel products, portrayed by Intel as: "Intel has dreamed up a new architecture that could in one fell swoop kill off the general purpose processor as a concept and the X86 instruction set as the foundation of modern computing.

PRELIMINARY PROGRAM

Introduction to DataFlow computing; Concepts of DataFlow computing; Applications of DataFlow computing; Details of programming in space with hands-on activities; Detailed examples with hands-on: Math, Imaging, Machine Learning, TensorFlow, etc.; Advanced issues, synergy with IoT and WSNs.

Detailed information will be available at www.mipro.hr.

! Make your application as soon as possible because the number of participants is limited.

THE WORKSHOP WILL BE HELD IN ENGLISH

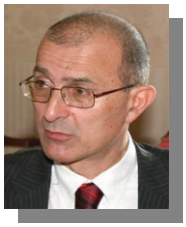
PLEASE FORWARD TO YOUR COLLEAGUES

ORGANIZER

- MIPRO Croatian Society

CHAIRS

Veljko Milutinović (Department of Computer Science, University of Indiana, Bloomington, USA)
Miloš Kotlar (ABB, Zurich, Switzerland)
Zoran Babović (ICEF, University of Belgrade, Serbia)



Prof. **Veljko Milutinović** received his PhD from the University of Belgrade, spent about a decade on various faculty positions in the USA (mostly at Purdue University and recently at Indiana University), and was a co-designer of the DARPA's first GaAs RISC microprocessor and the related 4096-processor systolic array. He serves as the Senior Advisor to Maxeler Technologies in London, UK. His research is mostly in datamining and dataflow computing, with the emphasis on mappings of algorithms onto architectures. He is a Fellow of the IEEE and a Member of Academia Europaea. He has over 100 SCI journal papers, well over 1000 ThomsonReuters citations, well over 1000 Scopus citations, and about 4000 Google Scholar citations.

Mr. **Miloš Kotlar**, ABB, Zurich, Switzerland. His specialty is Tensor Calculus for DataFlow SuperComputing. His Springer NATURE Lecture Notes in Computer Science article on Tensor Calculus is highly used by US industry.

Dr. **Zoran Babović**, ICEF, University of Belgrade, Serbia. His specialty is semantic processing for IoT and WSN on the edge of dataflow systems. His IoT and WSN IEEE Access paper is also utilized a lot by US industry.

CONTACT

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REGISTRATION FEE

	EARLY BIRD up to May 6, 2019	REGULAR from May 7, 2019
Members of MIPRO and IEEE		
	80 EUR	90 EUR
Others		
	100 EUR	120 EUR
Students (undergraduate and graduate)		
	Free of charge	