

Award Recipients at ISMVL 2012



Dmitriy Zhuk (photo courtesy Y. Yuminaka)

2011 Outstanding Contributed Paper Award: Dmitriy Zhuk (Moscow State University)

The 2011 Outstanding Contributed Paper Award, as selected by the ISMVL 2011 organizers, went to Dmitriy Zhuk, for his paper titled "The lattice of the clones of self-dual functions in three-valued logic."

Dr. Zhuk received his undergraduate and doctoral degrees in mathematics from Moscow State University. Since 2009, he has been a Junior Researcher also at Moscow State University in the subdepartment of Mathematical Theory of Intelligent Systems. In his Ph.D. thesis he considered decidability problems for definite automata and found a precise border between algorithmically unsolvable cases and algorithmically decidable cases for the A-completeness problem. About three years ago he began to focus on clone theory and published several results on clones in three-valued logic. His research interests also include Automata Theory and Constraint Satisfaction Problems.

The 2011 paper was followed by another excellent paper presented at ISMVL 2012, titled "The cardinality of the set of all clones containing a given minimal clone on three elements."



Marek Perkowski (photo courtesy Y. Yuminaka)

2012 Long Term Contribution Award: Marek Perkowski (Portland State University)

Professor Marek A. Perkowski received the 2012 *Long Term Contribution Award*, providing an excellent opportunity to briefly review his work in the area and his service to the MVL community.

Prof. Perkowski's interest in switching theory and logic design dates back to the early 1970s and his student days at the Technical University in Warsaw, Poland, where he earned his Ph.D. in 1980. His first scientific publication appeared in 1970:

M. Perkowski, "Application of logical schemata of algorithms to the synthesis of automata," Institute of Automatic Control, Technical University of Warsaw, 247 pages, 1970 (in Polish).

Prof. Perkowski's areas of interest include: Logic Synthesis, Machine Learning, Intelligent Robotics, Multi-Valued Logic, Reed-Muller Logic, Spectral Methods, FPGA Prototyping and Engines, Test and Design for Test, and Quantum and Reversible Logic. He currently serves as the Director of the Intelligent Robotics Laboratory at Portland State University, Portland, Oregon, USA, and as the organizer and leading researcher in the international Portland Quantum Logic Group (PQLG) and the Portland Logic and Optimization Group (POLO).

In addition to the considerable volume of high-quality publications in multiple-valued logic, Prof. Perkowski continuously volunteers his services to the MVL community. In particular, in 2000 he served as the General Chair of the 30th ISMVL,

held in Portland, Oregon, and he has served as a program committee member of many ISMVLs and other related conferences and workshops. In particular, he regularly helps to organize the Reed-Muller Workshop and the International Workshop on Boolean Problems.

There are, however, other reasons, beyond the quality of contributions or amount of work done by Prof. Perkowski, that motivated his nomination for this respectable award, namely his always-enthusiastic attitude towards scientific work and spreading knowledge. All regular ISMVL attendees know that sessions where Prof. Perkowski participates are invariably enriched with interesting discussions, numerous questions, dynamic argumentation, and possibly some friendly criticism. The final result is always a set of productive comments intended to help the authors to continue and further improve their work to the benefit of the field.

Another important reason for the nomination is his positive attitude in reviewing scientific work. As a reviewer, Prof. Perkowski looks for new ideas and what is good in a paper, and then sends comments to help the authors on improving the paper to make it publishable, instead of just checking if it can be accepted or not. Those that remember the old days when contemporary conference systems were not a common practice and review reports used to be sent as letters or attached files, know that it was sometimes possible to guess that Prof. Perkowski had acted as a reviewer. It was not unusual to receive a review with as many pages of comments as the original submission, with large fonts, sometimes in different colours to emphasize both good and bad aspects of the presentation. Most importantly, these comments were followed by clear and constructive comments how the research and its presentation could be improved.

Prof. Perkowski positive attitude towards research and willingness to always support other researchers naturally resulted in a large number of co-authors from all over the world.

This also leads us to the third reason for his nomination. In recent years, Prof. Perkowski has devoted a lot of his time and endless energy to work with young researchers, by recruiting them early on at the high school level and pedagogically guiding them towards scientific research work in general and the area of Intelligent Robotics in particular. Related to this, as Prof. Perkowski admits himself, he dreams of creating a Robot Theater with humanoid robots as main actors.

Currently, a very large part of his research work is devoted to setting the stage for future applications of quantum computers. When asked about his current areas of interest, Prof. Perkowski says: "We want to be the first to see how quantum computers can be used in robotics." We congratulate Prof. Perkowski for the award, thank him for his contributions to the area of MVL and the great service to the MVL community, and wish him a productive and enjoyable time working towards the realization of his dreams.



Masanori Natsui and Kenneth C. Smith (photo courtesy Y. Yuminaka)

**2012 Kenneth C. Smith Early Career Award
for Microelectronics Research:
Masanori Natsui (Tohoku University)**

This year, the Technical Committee on Multiple-Valued Logic approved the creation of a new award to be named in honour of long-time ISMVL contributor Kenneth C. Smith. The award is to be presented to an early career researcher, preferably at the Assistant Professor or Postdoctoral Fellow level, who has made contributions to microelectronics aspects of multiple-valued logic.

The inaugural award was presented to Masanori Natsui, Assistant Professor in the Research Institute of Electrical Communication at Tohoku University, for his contribution toward multiple-valued circuit design using emerging nonvolatile memory devices. At ISMVL 2012, Dr. Natsui presented a paper titled "Process-Variation-Resilient OTA Using MTJ-Based Multi-Level Resistance Control," co-authored with T. Nagashima and T. Hanyu.

Dr. Natsui received his doctorate from Tohoku University in 2005. From 2005 to 2008, he was an Assistant Professor at Toyohashi University of Technology. He joined Tohoku University in 2008. His research interests include automated circuit-design techniques, nonvolatile circuit architectures and their applications, and the design of high-speed low-power integrated circuits based on multiple-valued current-mode technologies.

We look forward to many future excellent MVL contributions from Dr. Natsui!

contributions from J. Astola, V. Gaudet, and R. Stankovic