

The Work in History of Information Sciences at TICSP

The Tampere International Center for Signal Processing (TICSP) was a specific research unit within the Department of Signal Processing, Tampere University of Technology (TUT) in Tampere, Finland, aimed at gathering together international experts working in signal processing and related areas, including equally theoretical investigations and practical applications. TICSP was established in 1997 and successfully run by the Professor Jaakko Astola, the Director, and Mrs. Pirkko Ruotsalainen, the economic manager. In 2017 a reorganisation of the Tampere University of Technology started that combined Tampere University of Technology and the University of Tampere into what is now called Tampere University into which TICSP was subsumed.

Over the course of its history, TICSP has hosted 218 researchers from 35 countries. TICSP was an important part of the Academy of Finland Centre of Excellence in Signal Processing at the Tampere University of Technology. This status was maintained by the group for over 15 years. The excellent research atmosphere at TICSP motivated some of the researchers who visited it to become regular visitors returning for several years to perform research at TICSP.

As part of addressing its primary goals, TICSP organized workshops on various different subjects. An important goal of these workshop was establishing connections between researchers in different but related fields—for instance TICSP Workshops on Spectral Techniques and Filter Banks.

A natural next step for TICSP was to present the research results in two series of publications, *Research Monographs* and *Workshop Proceedings*, to make them freely accessible from the web site of TICSP.

In numerous discussions among the visitors to TICSP, it was recognized that there are many details of the former work in the considered research fields that are not widely known and remain discussed within restricted, rather small and somewhat closed circles of researchers—many pieces of important and interesting, but less known or forgotten research work, and also related publications. It also was observed that there are publications in languages different from English, for instance, Japanese and Russian, that are not widely known although they contained important contributions at the time when they were published. This led to the idea of issuing another series of TICSP publications under a generic title *Reprints from the Early Days of Information Technologies* with each issue devoted to a particular research topic or a renowned researcher and the researcher's contributions to the subject. We were guided by the general idea that looking into past helps to determine roads to the future. We believe this also is correct

in the more specific case of technology—knowing the ways of thinking of scholars in the past might help reveal new ideas or avoid unfruitful approaches. We believe that a researcher needs to know the work and activities of current colleagues equally important, know the work of “previous” colleagues—to know to some level of depth the history of the field.

A cover image for one of the volumes is shown in the figure.

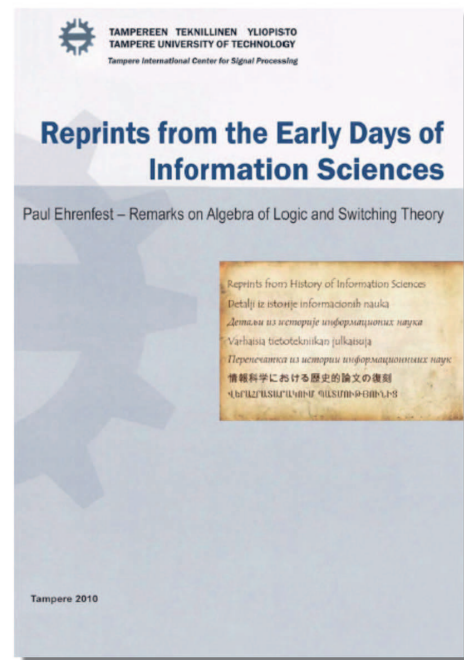


Fig. 1. Cover of TICSP Report #54.

Since the way research work is presented and written in scientific publications also convey information to the readers, it was decided that each volume would contain reprinted original publication in the language as it was initially published. The original version would be accompanied by translation into English, remarks about the publication's links to the present research subjects, and an explanation of reasons for selecting the publication for reprinting. The statements were supported, whenever it was available, by reprinted reviews and by pointing out citations of the item in international journals.

The series of *Reprints from the Early Days of Information Technologies* series has been jointly edited by Radomir S. Stanković (a regular visitor of TICSP, serving at the time when this series was launched also as an adjunct professor

at the Department of Signal Processing at TUT) and TICSP director Jaakko Astola. Some volumes involved the greatly-appreciated help of other researchers acting as co-editors. Providing original publications published decades ago, was a challenging task which benefitted greatly from the strong support of Mrs. Pirkko Ruotsalainen and Mrs. Marju Taavetti, a librarian at TUT. In this content, resolving copyright issues was an even more complex task having in mind the situation with old publications and publishers. Prof. Akihiko Yamada from Tokyo, Japan, provided an enormous support by advices and also concrete help in this matter especially for publications in Japanese.

The volumes listed below have come out of the TICSP *Reprints from the Early Days of Information Technologies* series.

- 1) *On the Contributions of E.I. Nečiporuk*, Editors Radomir S. Stanković, Jaakko T. Astola, TICSP Report #36, 2007, ISBN 978-952-15-1788-4
- 2) *Contributions of Akira Nakashima to Switching Theory*, Editors Radomir S. Stanković, Jaakko T. Astola TICSP Report #40, 2008, ISBN 978-952-15-1980-2
- 3) *Contributions of P.S. Poreckij to Switching Theory*, Editors Radomir S. Stanković, Jaakko T. Astola TICSP Report #46, 2009, ISBN 978-952-15-2052-2
- 4) *Contributions of Arto Salomaa to Multiple-Valued Logic*, Editors Radomir S. Stanković, Jaakko T. Astola TICSP Report #50, 2009, ISBN 978-952-15-2290-1
- 5) *Interview with Arto Salomaa*, Editors Radomir S. Stanković, Jaakko T. Astola TICSP Report #52, 2009, ISBN 978-952-15-2147-2
- 6) *Paul Ehrenfest - Remarks on Algebra of Logic and*

Switching Theory, Editors Radomir S. Stanković, Jaakko T. Astola TICSP Report #54, 2010, ISBN 978-952-15-2419-6

- 7) *Reminiscences of the Early Work in Walsh Functions, Interviews with Franz Pichler, William R. Wade, Ferenc Schipp*, Editors Radomir S. Stanković, Jaakko T. Astola TICSP Report #58, 2011, ISBN 978-952-15-2598-8
- 8) *Early Work of Aimo Tietäväinen in Number Theory and Coding Theory*, Editors Jaakko T. Astola, Radomir S. Stanković TICSP Report #59, 2012, ISBN 978-952-15-2817-0
- 9) *Reminiscences of the Early Work in DCT - Interview with K.R. Rao*, Editors Radomir S. Stanković, Jaakko T. Astola TICSP #60, 2012, ISBN 978-952-15-2818-7
- 10) *Reminiscences of the Early Work in DCT - Interview with K.R. Rao*, Editors Radomir S. Stanković, Jaakko T. Astola TICSP Report #60, 2012, ISBN 978-952-15-2818-7
- 11) *Contributions of Yasuo Komamiya to Switching Theory*, Editors Tsutomu Sasao, Radomir S. Stanković, Jaakko T. Astola TICSP Report #65, 2012, ISBN 978-952-15-3453-9
- 12) *Early Work in Switching Theory and Logic design in USSR*, Editors Radomir S. Stanković, Jaakko T. Astola, Anatoly A. Shalyto, Alexander V. Strukov, TICSP Report #66, 2016, ISBN 978-952-15-3786-8

The above publications are freely accessible in PDF format at the following URL, where there are also short video lectures for items 1,2,3, 4, and 6: http://ticsp.cs.tut.fi/index.php/Reprints_from_the_Early_Days_of_Information_Sciences.html