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IFIP is the global non-profit federation of societies of ICT professionals that aims at achieving a worldwide professional and socially responsible development and application of information and communication technologies.

IFIP is a non-profit-making organization, run almost solely by 2500 volunteers. It operates through a number of technical committees and working groups, which organize events and publications. IFIP's events range from large international open conferences to working conferences and local seminars.

The flagship event is the IFIP World Computer Congress, at which both invited and contributed papers are presented. Contributed papers are rigorously refereed and the rejection rate is high.

As with the Congress, participation in the open conferences is open to all and papers may be invited or submitted. Again, submitted papers are stringently refereed.

The working conferences are structured differently. They are usually run by a working group and attendance is generally smaller and occasionally by invitation only. Their purpose is to create an atmosphere conducive to innovation and development. Refereeing is also rigorous and papers are subjected to extensive group discussion.

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Christopher Leslie · Martin Schmitt (Eds.)

Histories of Computing in Eastern Europe

IFIP WG 9.7 International Workshop

on the History of Computing, HC 2018

Held at the 24th IFIP World Computer Congress, WCC 2018

Poznań, Poland, September 19–21, 2018

Revised Selected Papers

Editors

Christopher Leslie
South China University of Technology
Guangzhou, China

Martin Schmitt
Leibniz Centre
for Contemporary History
Potsdam, Germany

ISSN 1868-4238

ISSN 1868-422X (electronic)

IFIP Advances in Information and Communication Technology

ISBN 978-3-030-29159-4

ISBN 978-3-030-29160-0 (eBook)

<https://doi.org/10.1007/978-3-030-29160-0>

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Preface



Fig. 1. Monument to the Polish cryptographers Rejewski, Różycki, and Zygalski in Poznań.

Working Group 9.7 is proud to present this volume, which expands on and challenges current thinking in the history of computing. The genesis of this volume was our 2016 workshop in New York City. Given the location of the 24th IFIP World Congress in Poznań, Poland, in September 2018, we immediately set upon the idea of a workshop devoted to the history of computing in eastern Europe. After the close of the New York workshop, we collaborated on a call for papers and distributed it among our networks as well as to the listservs of relevant professional associations.

As has been our past practice, we required full papers for consideration, and then sent the papers through a rigorous revision process. Each paper was reviewed anonymously at least three times by our distinguished Program Committee, which consisted of a combination of Working Group members and outside experts. Conflicts among the reviewers were adjudicated by the volume editors.

In addition to these authors, we were joined at the Poznań University of Technology by members of the Polish Information Processing Society. Additionally, IFIP historian and WG 9.7 Roger Johnson organized a live, remote decoding of an Enigma message by the National Museum of Computing in Bletchley Park. This activity honored the work of three Polish cryptographers – Marian Rejewski, Jerzy Różycki, and Henryk Zygalski – toward reading Enigma messages in World War II. Comments from Dermot Turing, the nephew of Alan Turing, and Marek Grajek accompanied the “Enigma Live” session. Following the demonstration, delegates were taken on a tour of the Poznań Supercomputing and Networking Center, next door to the university. During

breaks, delegates also had the opportunity to explore Poznań's old town and visit the site of the future cryptography museum and a 2007 monument to the Polish trio (Fig. 1).

The papers we selected reflect academic approaches to history along with the expertise of museum and other public history professionals as well as the experience of computing and information science practitioners. In this way, WG 9.7, along with the whole of Technical Committee 9, upholds our commitment to the synergies that come from bringing academics, technical professionals, curators, and others into a conversation about the history of computing. Revised papers were circulated to workshop participants in advance of the workshop. After presentations at the Poznań University of Technology, delegates provided feedback to authors for their consideration. Final revised papers were submitted for consideration in these proceedings.

The organization of the proceedings roughly follows the agenda of the workshop:

1. *Eastern Europe*. The papers in this section offer new glimpses into the history of computing in Armenia, Czechoslovakia, and Hungary. For instance, Szabo offers a compelling portrait of a computing class conducted with a chalkboard in Hungary.
2. *Poland*. These papers, whose authors did not respond to our original CFP, are included as invited papers because they were part of our collaboration with the Polish Information Processing Society and the Enigma Live event.
3. *Soviet Union*. A highlight of these papers is co-authored by the children of two great names in the USSR: Anatoly Kitov and Victor Glushkov. They challenge the notion that Soviet computer science was a failure because it did not result in an ARPA-style national network. Kitov also details his own work in the first article to discuss Soviet control programs that monitored data transfer between multiple terminals for collaborative work.
4. *CoCom and Comecon*. Sikora and Schmitt offer extended examinations of the permutations of the cold war blockades based on their archival research. My own paper, an outgrowth of my presentation to TC 9 in 2014 for the Turku Human Choice in Computing workshop, rounds out the group.
5. *Analog Computing*. We offer two papers about computing before digital computing. Leipälä, Shilov, and Silantiev also include a translation of the book they found in their appendix.
6. *Public History*. Bodrato, Caruso, and Cignoni demonstrate what insights can be gleaned by their project of collecting and reverse-engineering early hardware. Smolevitskaya offers not just an overview of an archive but has also painstakingly tallied Rameev's inventions, including the iterations of Ural computers.

We owe our thanks to the volunteers for our Program Committee, whose comments greatly improved our work and the world congress organizers, who resolved most of the logistical challenges for this workshop for us.

Organization

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Christopher Leslie
Martin Schmitt

South China University of Technology, China
Center for Contemporary History, Germany

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