

Editorial: "Michie-Turing" IS2014 Award Recipient: Janez Grad

It is my honour and privilege to introduce the 2014 "Donald Michie and Alan Turing" prize recipient Janez Grad for Life Achievements in Slovenian Information Society (http://is.ijs.si/is_awards.html), aka "Michie-Turing" Award.

The name of the prize was proposed by Stephen Muggleton when we were discussing Slovenian international information-society events. Following a long analysis with colleagues we have set the nomination procedure inspired by the procedure Nobel prizes are awarded. Of course, our award cannot compete with the best world-wide awards like the Turing award, the »Nobel prize« for computing. Nevertheless, we wanted to highlight and emphasise the contributions of Donald Michie and Alan Turing on the one side, and our achievements in the fields of information society, computing, and informatics on the other side. The tuning of the procedure and obtaining the approval from the descendants of Donald Michie and Alan Turing demanded quite some time. At this point I would like to express my gratitude to all colleagues involved. The name "Michie-Turing" Award was coined from Alan Turing, computer »Einstein«, and Donald Michie, Turing's contemporary, who often visited Slovenia and together with Ivan Bratko helped establishing Slovenian AI school. Both names are highly appreciated in our societies - for artificial intelligence SLAIS, for computer science and informatics Informatika, and ACM Slovenia, among others. Donald was a very welcome and frequent guest in Slovenia and I often remember him staying in a room five doors from mine. His room still bears the name »Donald Michie room« and mine »Alan Turing room«. We celebrated their names in a series of events, e.g. at the conference itself, with a special issue of Informatica Vol 37, no. 1, 2013. The editors' Introduction to the Special Issue on "100 Years of Alan Turing and 20 Years of SLAIS" was written by Dunja Mladenič, Stephen Muggleton, and Ivan Bratko. It consisted of the following contributions: C. Sammut: The Child Machine vs. the World Brain; M. Gams: Alan Turing, Turing Machines and Stronger; A. Bifet: Mining Big Data in Real Time; J. Gama: Data Stream Mining: the Bounded Rationality; D. Mladenič and M. Grobelnik: Automatic Text Analysis by Artificial Intelligence; N. Lavrač and P. Kralj Novak: Relational and Semantic Data Mining for Biomedical Research; I. Kononenko, E. Štrumbelj, Z. Bosnić, D. Pevec, M. Kukar, and M. Robnik Šikonja: Explanation and Reliability of Individual Predictions; M. Bohanec, M. Žnidaršič, V. Rajkovič, I. Bratko, and B. Zupan: DEX Methodology: Three Decades of Qualitative Multi-Attribute Modeling; J. Demšar and B. Zupan: Orange: Data Mining Fruitful and Fun - A Historical Perspective.

In 2014, the Slovenian societies supporting Informatica decided to introduce the Michie-Turing prize recipient in a special editorial of this journal. The prize winner Janez Grad provided an overview of his early years in computing, titled:

A Survey of Computer Usage in Education and Research at the University of Ljubljana, with Emphasis on RCC and the UCC

Prof. Grad has been engaged in the process of the computer usage, computer science and informatics since 1960 when he started working at the (Nuclear) Institute »Jožef Stefan« (NIJS, later IJS), Ljubljana. At that time computer usage has first been introduced into processes of some Slovenian business companies, and education and research institutions, respectively, in particular the University of Ljubljana (ULj) and NIJS. In the following, the evolutionary processes of computer usage and the supporting activities in the above stated institutions are described.

In the 1960', the main players in informatics were the INTERTRADE enterprise, Ljubljana, that played the main role in most of the business companies by supplying them with the IBM technology on one side, and on the other side ULj and NIJS, where NIJS was the main initiator and action performer. For the purpose of its research process, NIJS was first using the IBM 705 computer which was installed at the Federal Statistical Office in Belgrade, Yugoslavia (computer programmer at NIJS was Prof. Janez Grad). Later on in 1962, ULj together with NIJS, from here on both together named as ULj, transferred their computer usage to the ZUSE-Z-23 computer system being installed in Ljubljana with the help of the Composite Organization of Associated Labour ISKRA (COAL ISKRA), Kranj, which has started the licence production of this type of computers in cooperation with the German company ZUSE (responsible employees for the system running were Prof. Janez Grad and Mr. Cveto Trampuž). By means of the financial support from ISKRA, the researchers at ULj programmed mathematical algorithms to be used on the Z-23 computer and the licensed computers.

The use of computers at ULj that started in 1961 expanded very rapidly in the following years. In addition to the use in research it has spread for educational purposes to all the faculties and also into the administration departments. All these activities demanded a new, more powerful computer system. But as the total amount of the university work on computers was too small for a justified and rational exploitation of a big computer system, and as ULj did not have the adequate financial means for purchasing a new computer on its own, ULj and in particular IJS gave the initiative for a joint big computer investment shared by ULj, the electronic equipment producers COAL ISKRA, Kranj and Slovenian government institutions, Ljubljana. And so a CDC 3300 computer of an appropriate configuration was installed in 1968. It was running in a batch mode with no terminals. The site of the installed CDC 3300 computer, named as »Republic Computer Centre« (RCC), was on the outskirts of Ljubljana, in Ljubljana – Stegne, a couple of kilometres away from the ULj and other founders' sites - which resulted in poor communications between the RCC and their users. Prof.

Janez Grad was appointed as the head of RCC. Due to these facts, the managers of computer usage at ULj bought another smaller computer, IBM 1130, intended for the use of students, and installed it in the vicinity of the faculties at the Institute of Mathematics, Physics and Mechanics. Research work was processed partly on this computer as well.

Meanwhile, the expansion of computer usage continued at ULj. Besides the usual batch processing, the need for computer usage in process control appeared at the Faculty for Mechanical Engineering and IJS, and hybrid computers were developed by the Faculty for Electrical Engineering. ULj bought four new small computers in order to meet these demands, one IBM 1130, one IBM System 7 and two CDC 1700 computers. In order to cope with all emerging activities and problems accompanied them, ULj formed a group of experts – »The professional committee for computerization«, and named Prof. Dr. Jernej Virant as its head. Shortly after that, in 1971 ULj founded also the »University Computer Centre« (UCC) and named Prof. Janez Grad as the head of UCC. In the years 1971 – 73 they together designed a plan for the university terminal system oriented towards the central computer system in RCC which was accomplished by the middle of 1975. In 1971, RCC decided to buy and operate a more powerful computer system CDC CYBER 70, which enabled multiprogramming and remote job entry. As (acting) directors of RCC were successively named Dr. Edo Pirkmajer, Mr. Cveto Trampuž and finally Dr. Desan Justin. As the new computer system was too big for the workload of the RCC founders, they invited some additional companies and institutions to join as partners of the extended RCC. And quite few of them really have joined the RCC, for example Educational Community of Slovenia, Research Community of Slovenia, Republic Road Community, National Bank, Ljubljana Dairies, Building Enterprise Obnova, Forestry of Slovenia, etc.

Due to ever increasing number of students of University of Ljubljana, which exceeded over 20.000, who needed a simultaneous computer usage UCC designed a timesharing and interactive type of work in 1981. The network embraced all the faculties and other high schools of ULj, and also the Republic Center for CAI (Computer Aided Instructions) at the Faculty for natural sciences and technology; the head was Prof. Dr. Aleksandra Kornhauser. This required a terminal system with over 100 display and/or teletype terminals and personal computers, respectively. As the CYBER computer at RCC did not quite suit these requirements, UCC decided to install and use a DEC system-10 with DELTA knot computers and KOPA 1000 and LA 34 terminals, respectively. The system has been further extended in the following years, and Mr. Franc Mandelc has been appointed as the head of UCC. ULj has started a new step in computer usage in years 1987-88, when DEC-10 has been exchanged by two VAX 8550 computers and a network of over 200 terminals and personal computers. The JUPAK system of Yugoslav Post Offices enabled the UCC computer system to be connected to other computers in Slovenia, Yugoslavia,

and Europe. In this way a direct information exchange between ULj and the universities in Europe became possible through e-mail (BITNET, COSINE) and joint (common) data bases could be built up and used. Nowadays UCC has been serving as ULj information centre supplying faculties and other users the information via university IT network, while the faculties use their own computer equipment. In meantime, RCC has been transformed into a centre used by Slovenian companies for solving their application problems in their business processes. The IT development at Slovenian universities, research institutes and in Slovenian society on the whole, for instance in Slovenian Society Informatika, Ljubljana Economists Society, COAL ISKRA, ISKRA DELTA enterprise, INTERTRADE enterprise, etc., was generally accompanied by intensive endeavour in research, teaching and development activities, which all helped to introduce the computer science and informatics programmes into the study and research programmes of most of the high schools and secondary schools and business sphere as well.

Some activities of the ULj and IJS researchers and teaching staff within the process of the computer system development and its usage at ULj and IJS: Some activities were realized within the frame of some professional associations while others were performed solely within ULj and IJS, respectively. For instance: Organization and realization of professional gatherings (conference, symposium, consultations) such as FCIP, IFIP CONGRESS 71, INFORMATICA, DSI, SOR, IS International Multiconferences (IJS, organizers Prof. Dr. Matjaž Gams, Prof. Dr. Vladislav Rajkovič, ...);

Publishing of periodical professional journals such as: (1) INFORMATICA, An international Journal of Computing and Informatics (IJS, Executive Editors Dr. Anton P. Železnikar, Prof. Dr. Matjaž Gams); (2) The Applied INFORMATICS; etc. Publishing research papers, monographs, text books, other books (such as: (1) The Electronic Computers. Editor Franc Spiller-Muys, Iskra, 26 authors, Published on the occasion of the IFIP CONGRESS 71, Ljubljana; (2) Introduction into Computer Science. DZS, Dr. Ivan Bratko, Dr. Vladislav Rajkovič).

Carrying through many research projects (such as: The Foundation of an Information Centre I - III. Dr. Janez Grad and 13 co-authors) and the computer network planning projects (such as: The University Computer Network. UCC, Chief editor Dr. Janez Grad, Executive Editor Mr. Franc Mandelc);

Analysing, describing and publishing the professional profiles in the field of computer usage and informatics (Governmental department, presiding by Prof. Dr. Jernej Virant, 20 co-authors).

(1) Business Informatics Dictionary. Prof. Dr. Ivan Turk and 37 co-workers); (2) Dictionary of Computing. CZ, technical-professional editor Dr. Matjaž Gams, 9 national co-ordinators and 80 co-workers.

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