SUMMARY OF

KARL REED'S

RESUME'

March 2008
Rev 2008.03-1

Karl Reed, MSc, FACS, FIE(AUST), ARMIT

HONORARY LIFE MEMBER, AUSTRALIAN COMPUTER SOCIETY

1.   General

Karl Reed is currently an Adjunct Associate Professor in the Department of Computer Science at La Trobe University. He had been an Assoc. Prof. in that Department from 1995 until his retirement in Februray of 2008. He had also been Director of the Amdahl Australian Intelligent Tools Program from 1989 until 1996 and was Group Leader for Software Engineering.

In February of 2007 he was awarded the CORE (The association of computer science departments in Australia), John Hughes Distinguished Service Award for 2006. This award is given every two years for outstanding and extended service for to the Computer Science and IT community.

He has been Acting Chairperson or Head of his Department on more than 14 occasions., often "acting" for periods of five to six weeks.

Prior to joining La Trobe as a Senior Lecturer in 1989, he was at the Department of Computer Science at R.M.I.T. where he taught Software Engineering and Computer Architecture, and was awarded a personal promotion to Senior Lecturer in July of 1988 after having received a contract promotion in 1985[2]. He joined that Department as a Lecturer in October of 1978.

In January of 2000, he was invited to become an Honorary Visiting Professor in Computer Science at the Middlesex University, and was a Visiting Scientist at the Fraunhofer Insitut for Experimentelles Software Engineering in Kaiserslautern from August 2002 until April 2003, with a 3 month break due to illness. During 2006 and 2007, he was also a Visiting Researcher at the University of Milano in Crema.

Reed has had an interesting and distinguished career in industry and academia, and in professional service to the Australian and International Information Technology Community. In particular, he has been a pioneer of Software Engineering

---

[2]   The contract promotion ceased in January of 1988, and a personal promotion was earned in July of that year.

education in Australia, and also pioneered Information Technology Industry representation.

He is also credited with saving the LM Ericsson telephone queue project from failure in 1975. (The Ericsson Queue is listed as one the 100 most significant Australian achievements of the 20th Century. Reed DID NOT invent or develop the queue, he "merely" ensured it had development software).

An examination of his research proposals will show that he has been an imaginative and accurate predictor of relevant research issues and topics in software engineering over an extended period. He has also been the recipient of a very large industry funded research contract. worth $1.7M in cash plus a substantial amount in hardware for research into software technology from Amdahl. This contract was let under the auspices of the Australian Government Offset and Partnership for Development Program.

2.   Service to The Software Engineering Community

Assoc. Prof. Reed has an outstanding record of service to the computing profession and to the software industry. In addition, he can also claim to be a figure of some influence in the Software Engineering Community on the Pacific Rim, as can be judged by his role as a Foundation member of the Steering Committee of the Asian Pacific Software Engineering Conference.

Perhaps the most notable recognition was his election as Chair of the IEEE-CS Technical Council of Software Engineering, and his appointment to the Software Engineering Coordinating Council (SWECC). SWECC is the result of a joint IEEE-CS and ACM initiative to define Software Engineering as a profession both within the US and internationally. This resulted in the identification and definition of a complete Body of Knowledge for Software Engineering, arguably the one of the most influential contributions to the field since its inception. Reed was also involved with SWECC's consultation with the Texas Board of Professional Engineers on the licensing of software engineers.

In January of 2007, he was awarded the Distinguished Service Award, CORE (Australia), 2006 (http://www.core.edu.au/). CORE is the association of IT academic departments in Australia.

He was also the Program Co-Chair of the International Workshop on CASE (IWCASE), held in Singapore during 1993, was appointed to the Board of IWCASE in July of 1993, and elected President in 1995. A further indication of his influence is establishment and Chairmanship of the Steering Committee for the Australian Software Engineering Institute(1995-1997), and his Interim Chairmanship of the ACS/Software Engineering Research Consultative Council(1995-) which he established.

In January of 1997, he took up his elected position as Governor of the IEEE-Computer Society, one of the most prestigious society's in the field of Information Technology. He is the first Australian to be so elected. In December

of that year, he was inducted into the IEEE-CS Golden Core as an inaugural member, for "...(being one of the).. principal contributors to the society's success".

In July of 1995, he was elected to the Interim Board of the newly formed Indigenous Information Industry Group, and in December of that year, to its full board.

He was, in December of 1989, elected Chairman of the largest branch of the ACS, the Victorian Branch, and held that position during 1990.

He was elected an Honorary Life Member of the Australian Computer Society in May of 1990 for his service to that body, and was elected a Life Member of the Software and Services Industry Services Industry Federation of Australia in September of 1988. His Fellowship of the ACS dates from 1983,[3] and he is also a Fellow of The Institution of Engineers Australia, being elected that Grade in July of 1995.

In February of 2000, he was awarded with the Murton Award, the Victorian Branch of ACS' most prestigous award for service.

Assoc. Prof. Reed was a Director of the Australian Computer Society's Technical Board, having been elected to the position of Governor (as it was then) in 1989. From 1992 to 2006, he was the Director of the ACS Computer Systems and Software Engineering Board.

Having founded the Australian Computer Society - Software Industry Association in 1985, he was its Chairman and Vice-Chairman (he was the Chairman of its predecessor, the Software Industry Committee, from 1974) from 1985 to 1986. In addition he was Foundation Joint President and Vice-President of the Software and Services Industry Federation Australia and has been actively engaged in representing the Software Industry to Government since 1974.

3. Education and Industrial Career

Reed was educated at R.M.I.T. where he earned an Associate Diploma in Communications Engineering in 1963/65, and at Monash University where he earned an MSc for a Thesis entitled "The Short Address Problem on Digital Computers" in 1983/84.

Reed spent twelve years in industry before becoming an academic in 1976. His industrial experience includes:-

a)   A short period as a telecommunications line engineer with the Australian Post Office .. (1964),

---

[3]   The Fellowship was for his contribution to the development of the Australian Software Industry.

(b) Six months as a computer maintenance engineer with Elliott Bros.. .... (1964/65)

c) Two years as an engineer implementing design calculations at ICIANZ ... (1965/67)

d) Two years in the computer centre at Monash University on systems programming, operations management, and commercial systems implementation ... (1967/69)

e) Two years at L M Ericsson in Sweden, working on the design and implementation of stored program telephone exchange software. While at Ericssons, he contributed to the design of the APZ150 computer ... (1969/71)

f) Eighteen months as development system support group leader on the L.M. Ericsson OTC No.6 Field Trial in Sydney ... (1971/73)

g) Three years as Senior Systems Engineer at L.M. Ericsson's research laboratory in Glenroy, Victoria, as Research Consultant on cpu design and software support ... (1973/76)[4]

In 1994, Reed was asked by La Trobe University to be one of its nominee Directors on the Board of QSR P/L, the university's first spin off company., an appointment he held until the University relinquished its share-holding in 1995.

4.   Academic Career

He began his academic career as a Tutor in the Computer Centre at Monash University, in 1976, where he began his Masters research program under Prof. Chris Wallace.

After joining R.M.I.T.as a Lecturer in 1978, he established a major stream in undergraduate training in Software Engineering, at a time when there were very few in the world. This dealt with major areas of Software Engineering, and consisted of three subjects totalling 104 hours of lectures. He also taught a Computer Architecture course in first year that was unusually advanced, and in file-design, digital logic and programming. Seminars were presented on these at the Wang Institute, University of Maryland (College Park) and at Wolverhampton Polytechnic in the 1980's.

Since joining La Trobe University, he has introduced additional subjects in Software Engineering at first, third and honours years. In addition, he played a very major role in the development of the Department's Bachelor of Computing Systems

---

[4] While at Glenroy, Reed insisted that he develop an Assembler (EPASS) as a risk-amelioration strategy in case the Alogol 68 compiler being developed for the Ericsson queue failed. His professional judgement was that it was likely to. The Algol 68 project did fail.. but the EPASS assembler ensured that the queue development could progress, and the product be completed. The queue was either the first in the world, or one of the first, and this technology is the basis for modern telephone queues. It was Ericsson's international offering in this area.

Engineering, working under the direction of and with Prof. Dillon. (This has subsequently taken over by others in the Department, but Reed took it to internal approval status).

This was the subject of a refereed conference paper at the Software Engineering Institute's Conference on Software Engineering in 1990.

Reed has a reputation as a stimulating teacher who expects high standards from his students, as a reading of his exams would show. Students tend to be very positive about his work when they move into industry, sometimes describing him as one of their most influential teachers.

5.   Conference Participation

While Reed has not published greatly, he has played a major role on a wide range of conference activities, including the initiation of a major regional event.

He has been an invited panellist on Software Engineering Education at IEEE COMPSAC[5] (1987, Tokyo), ICSE14 (1992, Melbourne). As can be seen from his CV, he has a quite widely sought after panellist and reporter on the Software Industry and Software Engineering. Of particular note are panels at the JSES in Japan (1993) and at the First Asian Pacific Software Engineering Conference in Tokyo (Dec. 1994).

Reed was Stream Chairman for Software Engineering for the First Pan Pacific Computer Conference held in Melbourne in 1985, and has been a member of the program committees for IEEE COMPSAC (1987,1988,1989), the International Conference on Software Engineering (1989,1990 and 1991), and the Australian Software Engineering Conference. He was also International Co-Chair for Australia for the ACM-Computer Sciences for 1991. His involvement with the international workshop on CASE has already been mentioned. In addition, he was appointed Program Coordinator for the 1992 ICSE having prepared and presented the successful bid to the IEEE in Pittsburgh in May 1989.

He is also a member of the IEEE-Computer Society's Technical Council on Software Engineering, and was its Chair from 2000-2004. An indication of his work as an educator is the fact that two of his La Trobe Software Engineering exams were accepted for presentation at the Software Engineering Workshop being held in conjunction with ICSE16 in Italy in 1994.

He presented a mini-tutorial on Undergraduate Software Engineering Curriculum Design at the 1998 Asian Pacific Software Engineering Conference in Taipei.

7.   Research Interests

His research interests include computer charging algorithms, computer architecture, linking loaders, software engineering, office automation, browser

---

[5]   Reed organised and chaired this panel, plus one on govermnet sponsored cooperative se programs..

technology, ethics and software industry technology policy. His research team, the AAITP, pursued a program set entirely by him, and which addressed a number of major areas of Software Engineering. It concentrated on the development of prototypes and had several novel tools available for demonstration. He has a useful list of publications which includes a significant number of seminars on technology policy and the Australian Software Industry.

In retrospect, it can safely be said that AAITP was a long way ahead of its time, and many of the more important of its goals have either not been met, or, have been met only recently.

In the area of office automation[6], his experience spans the period 1981 to 1990. He has supervised in excess of 17 student projects implementing prototype systems as part of final year software engineering courses. Recently, he has re-started minor work in this area, primarily through honours students.

As an older computer scientist, and professional, Reed has the view that many issues of new technology often make insufficient use of existing and prior research results. This has led him to make some modest forays in to the web-browser area, and the office automation area. In the former, he has used an honours project to develop a more stable and simpler means of dealing with web sites, using prior work on hypertext browser and navigation technology.

8.   Keynote Invitations

Assoc. Prof. has been an invited keynote speaker for:-

The 1981 EDP Audit Conference,
The 1983 EDP Audit Conference,
The 1982 ANZAAS Conference
The 1982 Japan Software Industry Association Conference
The 1983 Japan Software Industry Association Conference
The 1983 ICL Users Conference,
The 1984 Conference on Military Maintenance Engineering,
The 1984 HP SPAARC user's conference
The 1985 Queensland Government Information Industry Policy Seminar
The 1986 Government Expert Systems Seminar
The 1987 Australian Software Engineering Conference
The 1989 Pick Users Conference
The 1991 Triada[7] Conference in San Jose
The 1996 INAP Conference, Tokyo (invited address)
The 2000 WCRE invited address

---

[6]   In fact, one of the automatic formatiing features included in Word 7 was proposed, and used as teaching assignment, and demonstrated in student projects from 1981, and set repeatedly for many years.

[7]   Other keynotes at that conference included Prof. A. Nico Habermann of CMU

9.   Service to the Australian IT Industry

Reed's work is not limited to academia and research. He pioneered computer industry representation in this country, as has already been mentioned.

A high-light of his career was the first Trade Mission [8]by the Australian Software Industry to Singapore and Japan in 1982, which he organized and lead. He was subsequently invited to chair the International session of the 1983 Japan Software Industry Association Conference. Reed is a frequent visitor to Japan, and is an authority on the Japanese software industry.

He was appointed National Chairman of the Australian Computer Society's Software Industry Committee in May 1974, and presented the first Submission by a Computer Industry body to government at the IAC Inquiry of 1974 into EDP Equipment and Parts.

The ACS-SIC made a large number of submissions to government under Reed's leadership, and arranged the first contacts between Software Industry Representative bodies and government in 1976. The ACS-SIC made an extremely influential submission to the IAC Inquiry of 1983, and played a major role in determining State and Federal Government policies on trade and industry promotion in the period 1974-1996.

In 1983, he delivered the Saturday Guest lecture on National Radio commenting on the first budget of the incoming Labor Government.

The ACS-SIC arranged a conference at Ballarat in 1985 which was sponsored by the Victorian Department of Industry, Technology and Resources. This Conference provided the basis of a series of wide ranging Victorian initiatives in computer industry technology policy.

Reed played a major role in the Victorian State Government's Software Marketing Organization initiative, drafting the Request For Proposals which was sent to several hundred Victorian firms. The Victorian Government invested some $20M in the software industry as part of the SMO initiative.

In 1985, Reed visited every mainland state to launch the ACS-SIA, which became the first computer industry body with branches in each state.

During 1986, Karl Reed negotiated a Victorian Government grant of $330,000 over a three year period for the formation of the Software and Services Industry Federation of Australia, and served from 1987 to 1988 as a Foundation Joint President., and was made a life member for services to the Software Industry.

In 1988, he was Chairman of the Victorian Government's Advanced Software Grants Project which allocated a total of $180,000 to local industry.

---

[8]   As far as we know, this was the first trade mission promoting any part of the Australian IT sector.

He has also been a member of the Australian Standard Association Committee on Software Quality, and played a substantial role in the development of the Australian Standard on Software Quality Management, AS3563.

Over an extended period, Reed has proposed the formation of an Industrially based Software Engineering Insititute. In 1995, he began a project to create such a Insititute in Victoria, but was not successful. This was despite the fact that he was able to enlist more than 10 of Vicoria's most important software companies and establish promises of collaboration with University of Queensland.. As part of this exercise, he has obtained agreements for non-exclusive collaboration with CRIM in Montreal and the commercial arm of the CMU-SEI.

In late 1997 and during 1998, he became involved in the formation of the Victorian node of Software Engineering Australia through its interim Board. Subsequently, he was one of two academics elected to its Board in May 1998.

11. Industry Policy and Research

On moving to La Trobe, Mr Reed maintained contact with RMIT. He accepted the position of Visiting Senior Lecturer in the Department of Information Systems, Faculty of Business where he taught a Master's level course in Information Industry and Technology Policy. This course is also delivered in Singapore as part of RMIT's overseas program. In 1991 this was upgraded to a Visiting Senior Fellow appointment.

12. The Column "An Essential Reed"

In addition to his academic work, Reed was Consultant Editor to Australasian Computer World, from 1978 until 1995 and Consultant Editor to Computer Week from 1995 until 1998 . His regular column appeared in these publications from over that period. Reed's writing has appeared in U.S. Computer World, and has been re-run in U.K. Data News.

13. Study Leave 1986- NEC Japan and U Maryland

During his study leave (August 1986 to January 1987), Reed spent three weeks visiting NEC's Software Engineering Laboratory at the Tokyo suburb of Tamachi as the guest of Dr K Fujino, V.P. for research.

He also spent two weeks working with the Australian Trade Commission in Tokyo promoting the Australian Software Industry., and produced a report on the Japanese Software Industry.

The bulk of his time during this period was spent as Visiting Faculty Research Associate at the University of Maryland's Department of Computer Science at the invitation of the Chairman, Prof. V.R. Basili, where he worked on the TAME project with Dr H.D. Rombach and Dr V.R. Basili. Reed made contributions to the overall architecture of TAME, contributing to the solution to the security problem, and suggesting methods for solving the extensibility, configuration management, SDE

interface and scheduling problems. He also jointly authored a paper for the Joint Ada Conference on the impact of Ada on test coverage measures.

14. Study Leave 2002-2003

He spent the period Jan 2002 to July 2002 as a Visiting Prof. at Bond University followed by a month at Middlesex University where he was an Hon. Visiting. Prof. He then spent the period August 2002 to April 2003 at the Fruanhofer Institute for Experimental Software Engineering in Germany, as a Visiting Scientist. Unfortunately, this visit was marred by a serious illness that lead to 3 months leave.

15. Leave 2006-2007

He spent the period October 2006 to January 2007 , and September 2007, at the University of Milano at Crema, where he collaborates with Prof Damiani on the Tekne project.

16. Conclusion

Assoc. Prof. Reed is the author/coauthor of more than 18 journal and conference papers, 6 articles and a total of 18 technical reports. He is a widely sought after keynote speaker, having presented a total more than 16 keynote and invited papers, including two at ANZAAS.

His hobbies are cooking and photography