

# Numbers, Algorithms and Machines: 6 decades of personal computing and some consequences for **R**

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For nearly six decades, the speaker has had the good (or bad) luck to have been in contact with a number of people and developments important in the evolution of modern computing. Many of the early computational (numerical) algorithms still lurk within today's computing systems. So do some of the bugs and deficiencies of those early codes. Getting "bitten" by one such bug led to the *histoRicalg* initiative for the **R** project ([www.r-project.org](http://www.r-project.org)).

While much of computer science has evolved away from strictly numerical computing, the speaker has remained in that sphere and still contributes to several efforts, most notably **R**, which has become the most popular tool for research in statistics, data science and some related fields. This talk will review the speaker's journey with personal computers and some of the lessons learned.

The talk will conclude with a brief overview of *histoRicalg*, an effort to document, test and possibly re-implement older algorithms that form part of the underlying computational infrastructure of **R** and other systems. This effort has received modest funding from the R-Consortium, and is generating a variety of useful tools and information, mostly through 1-2 hour exercises by diverse volunteers who come across a subject that captures their interest.

## *About the speaker:*

Dr. John C. Nash obtained his B.Sc. (Honors) from the University of Calgary (in Chemistry, 1968) and his doctorate in Mathematics from Oxford (1972). He was in charge of a statistical analysis unit for Agriculture Canada until 1980, and is now retired Full Professor in the Telfer School of Management of the University of Ottawa where he taught statistics, forecasting, government online, and managing technological risk. Dr. Nash is the author of several books on scientific and statistical computation, most recently *Nonlinear Parameter Optimization Using R Tools*, as well as numerous scientific and popular articles. He was Editor and Managing Editor of SSC Liaison for the Statistical Society of Canada from 1991 to 1994. Earlier he was a columnist for Interface Age and the scientific computing editor for Byte. He was one of the members of the IEEE 754 committee that released the 1985 standard for binary floating-point arithmetic. He has been President of Nash Information Services from 1980 (incorporated 1982), through which he has conducted a number of practical applications of his ideas. He is Past-President of the Ottawa Canada Linux Users Group, co-organizer (with Paul Gilbert of the Bank of Canada) of the Ottawa-Gatineau R User Group. He calls English Country dances and runs the Playford's Progeny web site and wiki. Since his formal retirement, Prof. Nash has been actively working on Free/Libre software initiatives, in particular the R statistical system ([www.r-project.org](http://www.r-project.org)), in which several of his optimization codes are prominent, and for which he has mentored several Google Summer of Code students and assisted in administering the R component of this initiative. In addition, in his pseudo-retirement, he has authored a biography, a collection of short stories and several novels.