Lawrence J. Dickson, PhD, Mathematics

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Skills

Critical and creative writing: book, articles, patents, technical essays, play, screenplay

Invention and algorithm design

Scientific research and college teaching: mathematics, aerodynamics, engineering, physics

Computer hardware and software design and programming

Foreign languages: German, Slovak, Latin (some), Russian (some)

Profile

I study, carry out social and political criticism, and teach from a mathematical (that is, deductively logical) point of view. When standard tools do not suffice, I invent: for example, the Weariness Index (economics), the territorial computing paradigm, and several patents. I create mathematically robust algorithms, and plan and execute their implementation in firmware and software that behaves predictably and understandably. I am capable of good quality English prose.

Work experience

- **Author and critic**   1971-2004

  In addition to patents and technical essays, I have put my heart into creative work, some of which has been published or reviewed external to my own publishing efforts. This can form the foundation of academic teaching and research in wide areas, including economics, social criticism, philosophy and creative arts.

  - Several original essays about economics and communication published in "Culture Wars" and other periodicals
  - Screenplay and stage play, unpublished
  - "The Book of Honor" self-published to defend adolescents and the marginalized
  - The "Weariness Index", an original economics metric
  - Named inventor of several patents and patent applications
  - Technical articles and essays
  - Small publishing efforts in 1979-1981 ("November") and 1998-present ("Fierce Press")

- **Head Scientist, Software and Firmware**   10/2000 - 12/2005

  Tandberg Data Corporation   Poway, CA
  InoStor Corporation   Poway, CA
  Land-5 Corporation   San Diego, CA

These three companies are continuations of one another, exhibiting name changes due to investments and buyouts. I have developed intellectual property starting with the "Wiencko codes" (patented multiple redundancy RAID algorithms) through several related developments. I have also coded these in a system-independent core ("RAIDn"(TM)) and helped to guide its implementation in a working product ("InteliNAS"(TM) network attached storage).

- **Consultant**   1998-2000
  Self-employed   San Diego, CA

  This was mainly work for the same people as in the later job. It included expert defense of company interests in legal cases (Land-5), and scientific analysis and development of an inventive micro-tester (Kinetic Probe).

- **Mathematician**   9/1997-2/1998
  Basic Research Corporation   San Diego, CA

  I supported inventions of Stephen Smith. I worked on the hardware implementation of an inventive motor design, and investigated the scientific (physical and mathematical) foundations of an inventive high-bandwidth data transmission design.

- **Chief Scientist**   5/1995-12/1996
       1993-1995 (part time)
  SuperComputing Surfaces   Santee, CA

  This was an R&D company formed and owned by six engineers including myself. We developed prototypes using PC, Transputer and PIC hardware. Our main project was a Ford Motor Company automotive radar prototype. Other projects included initial development of a computer holography invention.

- **Chief Scientist**   1993-1995 (part time)
  Superset'93 Inc   San Diego, CA
       10/1981-12/1992
  Superset Inc   San Diego, CA

  These companies were successors of one another, with Superset'93 buying out the assets of Superset. The product was a bit-slice workstation that proved capable of highly advanced graphics. I developed and maintained the "Function Processor" board microcode, the data transmission ("Bridge Box") hardware and software, and core graphics software.

- **Consultant in mathematical methods**   1978-1981 (part-time)
  Researcher and instructor   1978-1981 (part-time)
  Boeing Company   Renton, WA
  Superset, Inc   San Diego, CA
  University of Washington   Seattle, WA

  The UW work included 2D hodograph simulations and high speed 3D work on a Cyber 7600. I also taught undergraduate mathematics and engineering (statics). The Boeing work was on advanced methods in digital smooth surface definition ("geometry"), many of which had been originated by me at an earlier date. I also consulted for a Bellevue company and for Superset, and developed the "hyperbolic quilt" patented model, which evoked the interest of the Escher Foundation.

- **Senior engineer (applied mathematics researcher)**   1/1975-7/1978
  Boeing Company   Renton, WA

  After learning some aerodynamics, I did some basic work on the influence coefficients for supersonic linear potential-flow panel methods. This ended up in the PANAIR system being developed for NASA. I also originated some ideas on digital smooth surface definition, or "geometry." With Allen Chen, I developed an idea suggested by Paul Rubbert into a transonic far-field matching system. Finally, I started development on the related problem of mesh generation.

- **Post-doctoral teaching fellow**   3/1973-1/1975
  University of New South Wales   Kensington NSW, Australia

  I mostly "tutored" freshmen and sophomores, but also taught one advanced course, "Banach and Lie Algebras," from notes I prepared myself.

- **Instructor, Mathematics**   2/1971-6/1971
  Purdue University   Lafayette, IN

  I taught differential equations, ordinary and partial.

- **Teacher, Mathematics**   1969 (temporary)
  Thomas Bennett (Secondary) School   Crawley, Sussex, England

  I taught pupils aged 12 - 17.

Sampling of writings and publications

All publications are by me if no author mentioned; otherwise, — represents my name. Several patents and publications, and large numbers of proprietary works, are omitted.

- "Transparent Analogy as a Foundation for Language," a 20-page white paper, copyright —, 6 April 2006. Circulated by permission.

- "Reconfigurable Computing Array Without Chassis," U. S. Patent Application, Patent Attorney Docket No. 85032.13PCT, application number 11/111,147, filed on April 20, 2005, —, applicant and inventor.

- "The Axe of God" (screenplay), unpublished, December 2000-July 2004. Alaric and the fall of Rome - not at all what people think it is.

- "Flat is Beautiful," Proceedings of the International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA'04), Hamid R. Arabnia, ed., p. 709-715. CSREA, Las Vegas, NV, June 21-24, 2004.

- "The Capital College: Hope for Our Children," Culture Wars, April 2003. Escape from the senseless conundrum of destitution amidst plenty.

- "Fixing the World" (stage play), unpublished, March 2002. A satire on international aid bureaucracies. Submitted by Roberta Sherry-Scelza, director, to Odyssey Theatre, 2055 South Sepulveda Boulevard, Los Angeles, on May 16, 2006.

- "The Easy Science," Culture Wars, April 1999. An a priori examination of economics under the assumption that value precedes price.

- THE BOOK OF HONOR, Fierce Press, 1998. 223 pp, index, bibliography. ISBN 0-9666440-0-X. Advice, social criticism, legal and economic theory including an economic indicator ("Weariness Index") developed by me. Reviewed in Culture Wars (May 1999) and Triumph of the Past (October 1999).

- "occam Road Map for the DOS PC," Proceedings of the International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA'96), Hamid R. Arabnia, ed., p. 1010-1019. CSREA, Sunnyvale CA, August 9-11, 1996. Reprinted in the Proceedings of the HP Handhelds '96 Conference, David Shier, ed. Shier Communications Inc, Anaheim CA, August 24-25, 1996.

- Michael Burney, —, and Bernard Freund: "An all electronic system for the capture, storage, and display of volumetric images utilizing holography," SPIE AeroSense'96 Symposium, Orlando, Florida, April 8-12, 1996.

- "Manipulative Speech," Fidelity, September 1993. A destructive power has occupied the receptors of human communication.

- S. G. Hotovy and —: "Evaluation of a vectorizable 2D transonic finite difference algorithm," AIAA 17th Aerospace Sciences Meeting, New Orleans, Jan 15-17, 1979.

- "Some mesh generation requirements and methods," Proc of Workshop on Future Computer Requirements for Computational Aerodynamics, Ames Research Center, Oct 4-6, 1977. NASA Conference Publication 2032, pp 290-294.

- —, A. W. Chen, and P. E. Rubbert: "A new approach to far-field boundary conditions in transonic computations," Proc 5th Int'l Conf on Numerical Methods in Fluid Dynamics, A. I. van de Vooren and P. J. Zandbergen, eds, Springer, 1976, pp 173-178.

- "Limit Properties of Poisson Kernels of Siegel Domains of type II," Trans Amer Math Soc, V 209, pp 113-131.

- "Limit Properties of Poisson Kernels of Tube Domains," Trans Amer Math Soc, Aug 1973, pp 383-401.

Education

- Princeton University   Princeton, NJ
                                                              1968-1971

  I was the first of my entering class to graduate with a PhD in mathematics. Adviser: Professor Elias M. Stein. Dissertation: "Some Limit Properties of Poisson Integrals and Holomorphic Functions on Tube Domains."

- Seattle University   Seattle, WA

	1964-1966, 1967-1968
University of Washington	Seattle, WA
Postgraduate math courses	1967-1968
University of Tuebingen	Tuebingen, Germany
Credits transferred	1966-1967

Graduated summa cum laude with Bachelor of Science degree in mathematics (minor in philosophy). Grade point average 3.99 out of 4.00, first in class of about 700.

Undergraduate awards: Runner-up in national undergraduate math research paper competition, Pi Mu Epsilon Society, 1966; paper published in Pi Mu Epsilon Journal, Spring 1967. National Science Foundation Fellowship, awarded 1968. Woodrow Wilson honorary fellowship, 1968. President's Cup, Seattle University, 1968.