

Curriculum Vitae of Peter Zilahy Ingerman, PhD

CURRICULUM VITAE

**Peter Zilahy Ingerman, PhD
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Experience

**1998- Independent Consultant
Willingboro, NJ**

[See Examples of Services Performed, below]

**1992-1998 Franklin Electronic Publishers, Inc
Senior Software Engineer
Mt. Holly NJ**

Designed and implemented software for hand-held information retrieval devices. Designed and implemented data compression software. Designed and implemented a system to normalize assembly language code, and to find common subroutines. Designed, implemented, and documented a number of additions to the set of UNIX utilities.

[Note that I satisfied the needs of a small number of clients during the period 1992-1998; the work done is included under Examples of Services Performed.]

**1977- Independent Consultant
Willingboro, NJ**

[See Examples of Services Performed, below]

**1972-1977 Equitable Life Assurance Society
Senior Manager, Technical Support
New York, NY**

Consulted with various departments on systems design, integration, planning, and conversion. Participated in international programming language standardization.

**1965-1972 RCA Computer Systems Division
Manager, Language Systems Standards and Research
Cherry Hill, NJ and Riverton, NJ**

Participated in international programming language standardization. Developed experimental language design tools. Developed systems for data base management. Developed a PL/I compiler design.

**1963-1965 Westinghouse Defense and Space Center
Manager, Programming Language Research
Baltimore, MD**

Developed programming techniques for an iterated-array computer (SOLOMON, predecessor to the ILLIAC IV). Participated in international programming language standardization.

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Experience (Continued)

**1957-1963 University of Pennsylvania
Graduate Research Assistant
Philadelphia, PA**

Performed research into and development of techniques for machine translation of mechanical languages. Participated in international programming language standardization. Assisted staff on proper usage of University computing facility. Worked with Dr. Grace Hopper and Dr. John Mauchly.

1955-1957 (Student, University of Pennsylvania)

**1954-1955 Philco Corporation
Electronics Technician
Philadelphia Pa**

Worked as technician in the Research Laboratories.

1953-1954 (Student, College of Emporia, Emporia KS)

**1952-1953 Kansas Power and Light Co.
Tabulating Machine Operator
Topeka KS**

Punched card equipment operator and analyst, developed system to account for stockholder voting.

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Education

BA (Physics)	1958, University of Pennsylvania
MSE (Electrical Engineering)	1963, University of Pennsylvania
PhD (Philosophy)	1991, Greenwich University, Hilo, HI

Patents

2,911,566	D. R. Taylor, Jr, and P. Z. Ingerman Deflection System for Cathode Ray Tubes
3,054,059	P. Z. Ingerman Pattern Suppressed Counter Circuit

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Professional Societies and Designations

**Institute for Electrical and Electronic Engineers (and predecessors), 1955-
Student, 1955-1961; Member, 1961-1964; Sr. Member, 1964-1996; Life Sr. Member, 1996-**

**IEEE Computer Society (and predecessor), 1955-
Member, 1955-**

**IEEE Society on Social Implications of Technology
Board of Governors, 2007-2009**

**Association for Computing Machinery, 1958-
Member, 1958-
Chair, Programming Languages Committee, 1964-1967
ACM National Lecturer, 1967-1968
Editor-in-Chief, Computing Reviews, 1974-1979
ACM Standards Committee, 1967-1980**

American Association for the Advancement of Science, 1965-

American College of Forensic Examiners, 2000-

**New Jersey Academy of Sciences, 1965-
Member, 1965-**

**British Computer Society, 1968-
Member, 1968-1969; Fellow, 1969-2003; Life Fellow, 2003-
Chartered Engineer (CEng) [British Engineering Council], 1990
Chartered IT Professional (CITP), 2004-
Chartered Scientist (CSci) [British Science Council], 2005-
British Computer Society, USA Section, 2004-
Treasurer, 2004-**

**Sigma Xi (Scientific Research Society of North America), 1976-
Regular Member, 1976-1981; Life Regular Member, 1981-**

**Data Processing Management Association and successor, 1976-1996
Southern New Jersey Chapter, Board of Directors, 1992-1994**

**Independent Computer Consultant's Association, 1978-
National Treasurer, 1999-2001**

**Business Forms Management Association, 1986-1992
Mid-Jersey/Delaware Valley Chapter
Vice President 1986-1987, President, 1987-1992**

**PC Club of South Jersey, 1991-1992
Newsletter Editor, 1991**

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Specialized Education and Designations

Certificate in Data Processing (CDP), 1978
Certificate in Computer Programming (CCP), 1979
Certified Systems Professional (CSP), 1985-1996

Fellow, Life Management Institute (FLMI), with specializations in
Electronic Data Processing, 1973
Selection of Risks, 1975
Life and Health Insurance Claims, 1976

Chartered Life Underwriter (CLU), 1975

Emergency Medical Technician (EMT), 1982-1992, 2003-

Miscellaneous

Board of Directors, Philadelphia Health Plan Inc., 1975-1977
Board of Directors, Crossroads Runaway Program, 1981-1982
Board of Officers, Willingboro Emergency Squad, 1986-1989, 2003-
Board of Directors, Compliance, Inc., 1989-1992
Board of Advisors, Providence House (a shelter for abused women), 1991-1994
Vice Chair, 1993-1994

Member

Franklin Institute, 1958-1991
MENSA, 1965-
American Cryptogram Association, 1969-
American Guild of Organists, 1969-2005
Co-Dean, South West Jersey Chapter, 1997-1998
Dean, South West Jersey Chapter, 1998-1999
Treasurer, South West Jersey Chapter, 1999-2005
Triple Nine Society, 1979-
Association of Humanistic Psychologists, 1978-
International Transactional Analysis Association, 1980-
Association of Former Intelligence Officers, 1999-

Biography appears in *Who's Who in the World*, etc.

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Professional Activities Not Listed Above

Adjunct Professor, Computer Science Department, Pratt Institute of Technology, 1958-1973

International Federation for Information Processing

Working Group 2.1 (ALGOL) 1962-1969

Working Group 2.2 (Language Description) 1967-1982

Conference on Data Systems Languages (CODASYL)

RCA Representative to COBOL Committee 1967-1971

American National Standards Institute

X3.4 (Programming Languages) 1960-1969

Chair, 1969

X3.4.2 (Language Specifications) 1961-1971

Chair, 1963-1971

X3.4.5 (International Representation) 1963-1969

Mathematical Association of America

Visiting Lecturer, 1978-1988

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Publications

A New Algorithm for Algebraic Translation
14th National Meeting of the ACM, 1959

Towards a Theory of Recursive Processors
16th National Meeting of the ACM, 1961

On the Construction of Micro-Flowcharts (Gorn, Saul; Ingerman; and Crozier, John)
Communications of the ACM, Vol 2 Nr 10, 1959

A Note on the Calculation of Interest
Communications of the ACM, Vol 3 Nr 10, 1960

Thunks
Communications of the ACM, Vol 4 Nr 1, 1961
Reprinted in Compiler Techniques, Barry Pollack, ed;
Auerbach Publishers, 1972; ISBN 0-87769-076-6

Dynamic Declarations
Communications of the ACM, Vol 4 Nr 1, 1961

**A Translation Technique for Languages whose Syntax is Expressible
in Extended Backus Normal Form**
Symbolic Languages in Data Processing, Gordon and Breach,
(Proceedings of March 1962 IFIP Conference in Rome, Italy)

The Parameterization of the Compilation Process
Formal Language Description Languages, North Holland, 1966
(Proceedings of September 1966 IFIP Conference, Vienna, Austria)

An Assembly Language for Reprogramming (Graham, Marvin; and Ingerman)
ACM Reprogramming Conference, Princeton NJ, 1965

A Universal Assembly Mapping Language (Graham, Marvin; and Ingerman)
ACM National Conference, 1965

A Syntax-Oriented Translator
Academic Press, New York, 1966
Revised and reprinted, 1967 and 1968
Russian Translation, 1969

A Taxonomy for Programming
Proceedings of the 4th Australian Computer Conference
Adelaide, South Australia, 1969
Proceedings of the 2nd All-Union conference on Programming
Akademgorodok, Siberia, 1970

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(Publications, continued)

A Note on the Imaginary Bosom

Journal of Irreproducible Results, January 1973

Making the Most of Your Check Digits

Dr. Dobbs Journal, April 1982

Computer Consultants

Computers in Landscape Architecture

Landscape Architecture Technical Information Series 8, May 1984

Computer Considerations

Proceedings of the Tenth National Nutrient Data Bank Conference,

U. S. Department of Commerce,

National Technical Information Service, PB86-159589, July 1985

Artificial Intelligence: An Overview

Datapro Manufacturing Automation Series

Datapro Research Corporation, Delran NJ

March 1987

The World in Thorne Smith (Doctoral Dissertation)

University Microfilms, Inc. [Order Nr. LD02136]

Ann Arbor, Michigan

February 1992

(Lectures on the Y2K Problem were given to:

Willingboro Rotary International, 1999

Athey & Co, Accountants, 1999

Fleet National Bank, 1999)

(A lecture on computer security was given to:

Willingboro Rotary International, 2000)

(A lecture on calendrics was given to

Philadelphia Mensa, 2002)

(Several articles as co-author with Dan Mabbutt, About.com guide to Visual Basic

About.com's Visual Basic site, 2003)

(A non-credit course on Thorne Smith was taught as part of the LIFE program of

Burlington County College in 2003)

(A non-credit course on Calendrics was taught as part of the LIFE program of

Burlington County College in 2004)

Two Hebern Cryptographic Machines

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Some Examples of Services Performed as a Consultant

Advised a small pipe-organ firm on the design of pipe organ components (and assisted in building some of those components).

Served as an expert on computer and computer-related issues to law firms and professional engineering firms.

Served as an expert for an intellectual property lawyer in a patent case, that required reverse-engineering the software in a proprietary device to determine whether or not there was a patent issue (references available on request).

Served as an expert witness, analyzing statistics in a lawsuit brought for discrimination on the basis of age (references available on request). [FITZ v. PSE&G, Superior Court of New Jersey, Essex County, Docket L-14338-96].

Created a program that does a complete statistical analysis of two-by-two tables using the Fischer Exact Test, as well as computing the χ^2 statistic and the odds ratio. Utilized this program as an expert witness in a discrimination case (references available on request). [SCOTT v. IBM CORP., Civil Docket 98-4092(JBS), US Court, District of New Jersey]

Consulted with counsel on an age discrimination case [PUGLISI V. CITYOF NEW BRUNSWICK, Civil Docket 90-4212(JAG), US Court, District of New Jersey]

Designed, developed, and implemented a system for maintaining product label information for a food manufacturer. This system was written in FOCUS and FORTRAN, under CMS on an IBM main frame, but with development being done in the PC environment.

Evaluated *all* of the written material (policies, underwriting rules, brochures, newsletters, etc.) of a major insurance company for material that was inappropriately discriminatory on the basis of gender.

Designed, developed, and implemented a system for analyzing nutrient data and preparing reports. The input to the system is a "lottery card" on which foods have been coded. The computer was special-purpose computer with a mark-sense card reader and a thermal paper printer, designed for stand-alone use without monitor or keyboard. The system was written in QuickBASIC, and uses a proprietary data base.

Designed, developed, and implemented a system for entering, consolidating, maintaining, and reporting on the records required for employee drug testing as required by the federal regulations for a drug-free transportation workplace. This system was written in PC/FOCUS, and generated all of the required letters, reports, and inventory control information.

Provided professional assistance to an accounting firm in the computer and systems aspects of audits of four of its clients (a bank, a manufacturing company, a glass fabricator, and a ship building firm), and also reviewed and audited the EDP department of the accounting firm itself. These audits included security, privacy, and integrity of both the computer systems (including hardware and software) and the data processed by those systems.

Developed and implemented a statistical model for limited partnerships that invest in equipment leases, to allow the general partners to experiment with the various parameters of the partnership agreement. This model was written in QuickBASIC and ran in 10 minutes on a PC/AT, replacing a model that was written in RBase 5000 by a major

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accounting firm, and that took two and one half days to run on the same machine.

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(Some Examples of Services Performed as a Consultant, Continued)

Designed and implemented a system for tracking drug testing information. The system maintained all of the required records, as well as tracked the physicians, testees, and test kits. The system was implemented in PC/FOCUS and Microsoft Professional BASIC.

Developed and implemented a data base system to support plaintiffs in a major class action lawsuit against a convenience store chain. The system was implemented in PC/FOCUS. (References available on request.)

Designed and implemented several data bases (totalling on the order of 20 Gbytes) to permit the common manipulation of a number of different government studies on nutrition using current nutrition data rather than the data originally used in the studies. The implementation was done using FOCUS under CMS on an IBM 3083.

Designed a special-purpose language, and developed and implemented a compiler and run-time package for a large process-control system; the provided capacity significantly improved the power, and sales, of the system. The implementation was done in assembly language for a Z80 in a CP/M environment.

Conducted a feasibility study for a major New York publishing firm, to see whether computerization of the logging procedures in their book production department was cost-effective; the study continued from the initial specifications through the solicitation and evaluation of bids for the implementation of the system.

Analyzed the computer and systems requirements for a small landscaping consulting firm that required a specialized taxonomy for the plants used to replant deserts in the Middle East. The major effort was to educate personnel in setting up the taxonomy to avoid their attributing "human" judgmental powers to a computer system.

Recommended systems improvements for a Health Maintenance Organization, both at a managerial and computer systems level, and evaluated the desirability of purchasing a computer; advised against the establishment of an in-house computing facility, but for the purchase of a computer to be operated on a facilities management basis by an outside vendor.

Analyzed the work flow in the pension area of a major New York insurance company; new procedures were recommended that reduced the minimum processing time from three to two days, and improved control of both the pension applications and the associated money.

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Programs I Have Written

(This section includes programs I have written either for my own amusement, or with the intent of producing a marketable product. Programs written as part of my consulting services are mentioned above.)

With the explicit permission of UNISYS, developed a simulator for the UNIVAC I and UNIVAC II computers and the UNIVAC High Speed Printer. The simulator includes a number of hardware anomalies that existed in the original UNIVACs. It can, optionally, simulate a UNIVAC II instruction that was available for installation on a UNIVAC I, as well as a modification to UNIVAC I called Overdrive. The Simulator was written in Microsoft Visual Basic 6.0, and is currently publicly available as freeware.

Developed a program to compute the relationships among dates in various calendars. This program was originally written in Microsoft Professional Basic for DOS in 1991, and has been completely rewritten and expanded in Microsoft Visual Basic 6.0. The program implements the rules for some thirty calendars, and permits the calendars to be displayed in as many as sixty languages. This program is still under development, and is currently being beta-tested.

Developed a program to compute the savings required per month to pay multiple periodic bills with varying periods. The program takes into account the timing of the bills, and therefore minimizes the total amount of money required to be on hand. The program was written in Microsoft Visual Basic 6.0, and is currently being marketed.

Designed and implemented a complete membership system for a volunteer emergency squad; the system kept complete records on each member, including membership status, hours volunteered, and skills. This system was written in CBASIC in the CROMEMCO CP/M environment.

Developed a system for locating dates in an ephemeris given a specified configuration of planets. The system was written in Microsoft Visual Basic 6.0, and is currently being marketed.

Designed and implemented a reverse compiler for the CBASIC language, as originally marketed by Gordon Eubanks and, later, Digital Research. This program analyzed the p-code produced by the CBASIC compiler and reconstructed the original source code (not including, of course, the comments and the original variable names). The program was written in assembly language for the CROMEMCO CP/M environment.

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Languages and Systems

Assembly language for a Zilog Z80 and similar devices.

Assembly language for the Intel 80x86/80x87 family and similar devices.

Assembly language for the Intel 80x51 family and similar devices.

Assembly language for the 6502, 65816, and similar devices.

Assembly language for the IBM 704 and successors.

Assembly/Machine language for the UNIVAC I and UNIVAC II.

Assembly/Machine language for the UNIVAC SS-80.

Operating system environments: CP/M, MS-DOS, DR-DOS, Windows 3.1, Windows 9x, Windows XP, UNIX.

BASIC, including a number of variants such as CBASIC, Microsoft QuickBASIC, Microsoft Professional Basic 7.1 and, more recently, Microsoft Visual Basic 6.0.

C, in both a PC environment (Microsoft C) and a UNIX environment.

WordPerfect (starting with Version 3).

FOCUS (an Information Builders, Inc. product) originally on a main frame in the VM/CMS environment (since Version 3.9), more recently in a UNIX environment, and in a PC environment.

FORTRAN (various versions, dating back to 1957) on both mainframes and various PCs.

FRAMEWORK (originally an Ashton-Tate product) in various versions.

ALGOL and ALGOL-60 (no longer current)

PL/1 (no longer current)

COBOL (no longer current)

NOMAD (no longer current)