Clint Goss, Ph.D. – Resume

6 Fieldcrest Road, Westport, CT 06880
phone: 203-454-1479   fax: 203-222-0895   email: clint@goss.com   web: www.goss.com

Summary: Consultant with 30+ years experience in software design and implementation, international technology consulting, and technology intellectual property litigation. Extensive experience with GUI design, Internet technologies, Perl, X/Motif, C++, Unix, and compiler design.

Expert Witness / Intellectual Property and Patent Litigation

Served as a testifying expert witness and research expert in these intellectual property cases:

Advanced Monitoring Systems, Stamford, CT: October–November 2010

AMS vs. NYSRWB, involving the evaluation of independent monitoring systems. Research expert witness for the prosecution.

ASCAP (Am. Society of Composers, Authors, and Publishers) NY: Aug 2008 – Jan 2009

ASCAP vs. AOL, RealNetworks, and Yahoo!, involving the determination of licensing fees for downloads of digital music.

Yeda Research and Development Company Ltd., Tel Aviv: July 2008 – June 2009

Yeda vs. NDC (News Data Corporation) and NDS (News Data Service), involving the licensing of patents in the area of digital cryptography. Research expert witness for the prosecution.

Johnson & Johnson Services, Inc., New Brunswick, NJ: August 2006 – August 2007

Prism vs. Johnson & Johnson, involving US Patent No. 6,516,416, in the area of network security. Testifying expert witness for the defendant.

Willkie Farr & Gallagher, New York: March 2004 – February 2006

Reuters vs. Bloomberg, involving Reuters' US Patent Nos. 5,924,082, 5,924,083, and 6,260,025, in the area of automated trading systems. Testifying expert witness for the defendant. Performed research and authored expert reports and opinion documents.

International Consulting / Technical Assistance

Provided technical assistance on a pro-bono basis, primarily for businesses and NGOs in under-developed and developing countries. Projects have included:

- **CNFA / Alva LLC, Sachkhere, and AgroKartli, Gori, Republic of Georgia:** January–February 2012 and March 2013. Developed a Web strategy for use by farm service centers throughout Georgia, including two initial web sites – **http://www.Alvafsc.com/** and **http://www.AgroKartli.com/** – that serve 4,000 rural farmers.

- **Hebron University, West Bank:** January–February 2011. Taught undergraduate classes in Operating Systems, Software Engineering, Systems Programming, Object Oriented Programming, Education, and Music. Also provided technical assistance to the University.

- **Wat Nong Sikhunmeuang, Luang Prabang, Laos:** March 2009. English as a second language taught for monks of the Buddhist Monastery.

- **Beneficio Río Frío and Café Marcala, Santa Bárbara, Honduras:** February–March 2008. Graphics and web site development for these two coffee producers.

- **Land O' Lakes, Lusaka, Zambia:** February–April 2007. Designed and implemented six web sites for organizations in the livestock and agriculture sectors in Zambia.

- **Cooperative College of Kenya, Nairobi:** February–March 2005. Taught a course in Internet technologies and networking for professors and lecturers of the College.

- **School of Higher Economics, Moscow, Russia** – February–March 2004 – Taught an undergraduate-level course in Internet Technologies.

- **Sanita Pharmaceuticals and Office Express, Varna, Bulgaria** – February–March 2003 – Assisted Sanita, the largest retail and importer of pharmaceuticals, with the re-design of their web site. Also worked with Office Express, a major distributor of office supplies, with a data-mining project.

- **Bulbrew, Varna, Bulgaria** – February–March 2002 – Assisted Bulbrew, a producer of domestic Bulgarian beer, with market analysis and computer systems development. Also assisted Bulgarian businesses dealing with hotel management software, web site development, and e-commerce development.

- **Namibia Chamber of Commerce and Industry, Windhoek, Namibia** – March–April 2001 – Developed a web site and web-based application for the Chamber of Commerce – **www.ClintGoss.com/ncci/indexp.htm**.

- **TCG Software, Calcutta, India** – January–February 2000 – Designed and led a seminar on Web-based application development. The seminar trained TCG technical staff in developing web-based front ends for existing legacy systems as well as quickly prototyping and developing new Web-based applications.

- **Florimash, Harare, Zimbabwe** – July–August 1998 – Designed and implemented a small industrial forecasting model and operations management system in Microsoft Excel and Visual Basic.

- Developed the web site **www.Interopp.org** in 2001–2002 to provide information and promote technical assistance projects in developing countries.

Technology Consulting and Teaching

Consulting projects and teaching assignments in areas of computer technology, done primarily through my own consulting company Clint Goss Consultants, Ltd established in 1986:

New York University / SCPS, New York: May–July 2000

Taught Perl Programming, X52.9543, **www.Goss.com/perl**.

Pfizer Inc., Groton, CT and Tokyo, Japan: January 1997 – December 1999

Designed an application framework for recasting existing client-server and character-oriented applications on the Web and other Internet protocols. Implemented Web-based applications in this framework for collecting and disseminating laboratory test results, collecting raw data on clinical trials from physicians' offices, and selectively unblinding patients in a clinical trial. Implementation in Perl under Solaris using Oracle datastores and Apache.

Expanded the Web-based application framework developed at Pfizer / Groton for internationalization and localization in Japanese and English. Worked with Tokyo technical people to build a new Japanese Web-based application.

New York Stock Exchange / Securities Industry Automation Corp, New York: April 1993 – Dec 1996

Designed and implemented the system for managing the users, X-terminals, and market data services available on the trading floor of the NYSE. The system manages the configuration of the secure TCP network serving the specialists, brokers, and administrators on the floor. Implementation in C++ for Motif, using a SYBASE/Allbase hybrid datastore.

Shark Information Services, New York, NY: December 1992 – February 1993

Ported the TAL-to-C translator implemented under Tandem Guardian to SunOS.

Purvis Systems, New London, CT: June – October 1992

Overhauled a large shipboard transaction-based digital switching application. Converted from single-user to multi-user. Added fault tolerance to meet stringent requirements. Implementation in C under VMS.

Strategic Information Systems, Hartford, CT: April – May 1992

Converted a real-time graphics application from OS/2 to SunOS on a Sun IPX. Major components included digital video, satellite communications, and a distributed database.

Singer Link, Binghamton, NY: July 1991 – March 1992

Consulted on a very large, secure, military flight simulator. Dealt with Ada compilation issues, including the efficiency of generated code, compilation tools, project organization, and real-time performance. Developed tools in Ada for managing software on a very large project.

Transvik Systems AB, Madison, CT: August 1989 – March 1991

Designed and implemented a stock and bond trading system. Implementation in C under DecWindows and VMS. Port to 386 under SystemV/OpenLook. Developed tools for aiding in the production of X-Windows based applications. Converted the on-line trading engines from a DEC proprietary messaging system (PAMS, now DecNet Task-to-Task) to AT&T Tuxedo. Designed workstation applications for handling remote feeds, market control, and system control.

Concurrent Computer Corporation (Perkin Elmer), Red Bank, NJ: March 1988 – June 1989

Improved Concurrent's Ada compiler for the 3280 architecture. Optimized the generated code using loop induction variable elimination and loop-based global register allocation. Redesigned critical areas of the parser and optimizer. Implementation work done in Ada and C under OS/32.

New York Stock Exchange / Securities Industry Automation Corp, New York: August 1987 – July 1988

Designed and implemented a translator to convert software written in TAL into C. The translator ran under Tandem Guardian, translating TAL code developed for the Tandem environment.

AT&T, Summit, NJ: September 1987 – April 1988

Evaluated and expanded the AT&T methodology for C compiler optimization. Evaluated AT&T C on the 80386 as compared with three competing compilers. Developed a system for exposing what specific optimization techniques are employed by a compiler.

Quadtree Software Corp, Somerville, NJ: August 1986 – October 1988

Designed and implemented a set of source-to-source translators. Translated hardware simulation code written in Helix HHDL (a Pascal superset) into a wide range of simulation languages. Implemented translators to output VHDL (an Ada-like language), Mentor Graphic's BLM (a Pascal superset), HHB System's Cadat (a C-based language), Gateway's Verilog (a C superset), and LSI Logic's BSL (a custom simulation language). Also implemented a translator for converting generic C code into Pascal.

Datapoint Corporation, Richardson, TX: April – July 1986

Designed and implemented a Unix interface for the Datapoint RMS environment. This allowed a series of Unix-based compilers to be ported to RMS. Initiated the port of a Cobol 74 compiler.

Philon, Inc., New York, NY: August 1981 – February 1986

Designed and implemented a multi-language, multi-target compiler system under Unix. Responsibilities ranged across all areas of strategic planning, design, and implementation, included global technical design of the system, design and implementation of specific areas, and organizing a technical group of 43 people. Employed with Philon from its inception as a startup company employing 4 people to its position as a business with 94 employees.

Designed a compiling scheme that included multiple languages and targets as well as interpreters, debuggers, aggressive optimization, and database interfaces. Oversaw the design of interfaces for compiling C, COBOL, FORTRAN, Pascal, and BASIC. Developed a technology for producing code generators for 68000, VAX, 8086, National 32032, and WE32000 architectures.

Designed and coded the symbol table and intermediate code interfaces. Implemented the code generator generator as well as the core of the code generator. Designed and implemented the ISAM file structure. Designed and implemented a workshop for Philon products on the Macintosh. Designed the general optimization strategy; implemented the assembly level optimizer; researched and implemented a retargettable Machine Code Optimizer.

Courant Institute, New York University, New York, NY: August 1979 – August 1981

Participated in the design and implementation of the first validated Ada compiler.

Taught undergraduate courses for Computer Science majors in Machine Language and Programming Languages while working on my doctorate. Designed and taught a course in Systems Programming. Gave numerous lectures at the graduate level on incremental LR parsing, software testing, and the NYU/Ada project.

Bankwire, New York, NY: May 1979 – August 1980

Designed and implemented an on-line transaction archival system for recording financial transactions on the Bankwire communications network. Handled real-time acquisition of transactions, with facilities for redundant backup and extensive statistics gathering.

Incoterm, Inc., Wellesley Hills, MA: May 1977 – June 1979

Designed and implemented software for the first automated teller machine and several other on-line communications systems. Interfaced Incoterm terminals to mainframes using IBM 3270 and Honeywell VIP 7700 protocols.

Music

- Authored three books of transcribed music for the first three albums of Grammy-winner Mary Youngblood from May 2002 to April 2004 for Silverwave Records. Work done using Finale.

- Music Facilitation – currently offer workshops for players of the Native Flute – **www.ClintGoss.com**.

- Established the project studio Manifest Spirit Records (**www.ManifestSpirit.com**) and released a series of production CDs. See Publications below.

- Designed various music-related web sites:

  - **www.Flutopedia.com** – Native American Flute resources.

  - **www.NativeFluteSchool.com** – Native American Flute workshops.

  - **www.MusicForPeople.org** – redesigned and reorganized this web site in 2006.

  - **www.ShrutiBox.com** – web site for this East Indian drone instrument.

  - **www.ReturnToChild.com** – for the book Return to Child.

Education and Training

- New York University – B.A., M.S., and Ph.D., all in Computer Science (completed in 1986).

- Commercial Pilot with Instrument and FAA Flight Instructor ratings.

- Certified Music Facilitator, Music for People (**www.MusicForPeople.org**), October 2007.

Publications

- Native American Flute Ergonomics, revised January 6, 2015.
  arXiv: **http://arxiv.org/abs/1501.00910**

- Flute Playing Physiology (with Eric B. Miller), June 6, 2014, 54 pages.
  doi: **http://dx.doi.org/10.13140/2.1.4064.0643**

- **Trends in Physiological Metrics during Native American Flute Playing** (with Eric B. Miller), *Nordic Journal of Music Therapy*, April 29, 2014.
  doi: **http://dx.doi.org/10.1080/08098131.2014.908944**

- **An Exploration of Physiological Responses to the Native American Flute** (with Eric B. Miller), ISQRMM 2013, Athens, GA. Revised January 24, 2014.
  arXiv: **http://arxiv.org/abs/1401.6004**

- **Dynamic Metrics of Heart Rate Variability** (with Eric B. Miller), revised August 29, 2013.
  arXiv: **http://arxiv.org/abs/1308.6018**

- **MICRO SPITBOL** (with Robert B. K. Dewar and Martin Charles Golumbic), New York University, Courant Institute Technical Report No. 11, October 1979. Revised August 28, 2013.
  arXiv: **http://arxiv.org/abs/1308.6096**

- **Machine Code Optimization – Improving Executable Object Code**, Ph.D. Dissertation, New York University, Courant Institute Technical Report No. 246, June 1986. Revised August 22, 2013.
  arXiv: **http://arxiv.org/abs/1308.4815**
  Web: **http://www.ClintGoss.com/mco/**
  PDF: **http://www.ClintGoss.com/mco/Goss_1986_MachineCodeOptimization.pdf**

- **Intraoral Pressure in Ethnic Wind Instruments**, revised August 21, 2013.
  arXiv: **http://arxiv.org/abs/1308.5214**
  Web: **http://www.Flutopedia.com/breath_pressure.htm**
  PDF:
  http://www.Flutopedia.com/refs/Goss_2013_IntraoralPressureInEthnicWindInstruments.pdf

- **Flute Haven Journeys** (produced by Clint Goss), Manifest Spirit Records, January 2013, **www.ManifestSpirit.com**.

- **From War to Peace - Transforming Generational Trauma into Healing** (by Dr. Ani Kalayjian, produced by Clint Goss), Manifest Spirit Records, August 2010.

- **Alba** (by Eugene Carr, with Peter Dubner and David Rudge, produced by Clint Goss), Manifest Spirit Records, July 2010, **www.Alba-CD.com**.

- **The Listening Book and The Musical Life** (by W. A. Mathieu, produced by Clint Goss), Manifest Spirit Records, November 2008, **www.ListeningBookAudio.com**.

- **JazzGrass** (by Eric Miller), co-published by Manifest Spirit Records, February 2008, **www.JazzGrass.net**.

- **The Darling Conversations – Volume 1** (by David Darling and Julie Weber, produced by Clint Goss), Manifest Spirit Records, December 2007, **www.DarlingConversations.com**.

- **Mystic Song** (by Lynn Miller, produced by Clint Goss), Manifest Spirit Records, September 2007, **www.ManifestSpirit.com**.

- **NAFTracks** – a series of four CDs for Native Flute players February 2008, December 2008, August 2009, and December 2009 – **www.NAFTracks.com**.

- **SpiritGrass** (audio CD with Eric Miller, David Darling, and Lynn Miller), Manifest Spirit Records, September 2006, **www.SpiritGrass.com**.

- Three books of transcribed music for the first three albums of Grammy-winner Mary Youngblood. Silverwave Records:

  - **The Offering**, 136 pages, 2003.

  - **Heart of the World**, 56 pages, 2004.

  - **Beneath the Raven Moon**, 122 pages, 2005.

- **The Road Rally Handbook**, 368 pages, Rally America, 1993.

- **Compilers Using a Universal Intermediate Language** (with Peter Whyte and Richard Rosenberg), U.S. Patent #4,667,290, 1987.

- **Optimizing Compilers** (with Mark S. Meretzky and Benny Pollak), Proceedings of the 1986 UniForum Conference, February 4–7, 1980, Anaheim, California, pages 125–140.

- **Machine Code Optimization – Improving Executable Object Code** – Ph.D. Dissertation, New York University, Courant Institute Technical Report No. 246, June 1986. Published January 18, 2010, General Books LLC, ISBN 1-15350558-4 (978-1-15350558-1). Available at **http://www.ClintGoss.com/mco/**.

- **Optimizing Compilers Satisfy Heavy Processing Needs** (with Mark S. Meretzky), Computer Design, August 1985.

- **Optimizing Compilers Decrease Native Code and Speed Execution**, Computer Technology Review, Summer 1985, pages 25–30.

- **Macro Substitutions in MICRO SPITBOL – a Combinatorial Analysis**, (with Martin Charles Golumbic and Robert B. K. Dewar), Proceedings of the 11th Southeastern Conference on Combinatorics, Graph Theory and Computing, Florida Atlantic University, Boca Raton, Florida, March 3–7, 1980, Congressus Numerantium, Volume 29, Utilitas Mathematica, University of Winnipeg, Manitoba, Canada, December 1980, pages 485–495.

- **The NYU Ada Translator and Interpreter** (with Robert B. K. Dewar, et al), Proceedings of the ACM-SIGPLAN Symposium on Ada programming language, pages 194–201, 1980, ISBN:0-89791-030-3, **doi:10.1145/800004.807950**. Also published in ACM SIGPLAN Notices, Volume 15, Number 11, November 1980, **doi:10.1145/948632.948659**.

- **MICRO SPITBOL** (with Robert B. K. Dewar and Martin Charles Golumbic), New York University, Courant Institute Technical Report No. 11, October 1979.

- **Perfect Elimination and** Chordal **Bipartite Graphs** (with Martin Charles Golumbic), Journal of Graph Theory, Volume 2, Number 2, pages 155–163 (Summer 1978). **doi:10.1002/jgt.3190020209**

- **Catastrophe Theory and its Applications to Embryology**, The Bristol Journal, 1977, pages 75–79.

- **Operation Pond Probe** (with Eric Atkin, Michael Atkin, Mitchell Browning, John Cohen, Sydney Gaddy, William Howard, Jeffrey Hurtt, Andy Kane, Denise McMorrow, Richard Nastasi, Wade Rawluk, Scott Rechtschaffen, Daniel Richman, Daniel Ruberman, Steven Sherman, Vicki Sherman, Richard Siman, and Jannan Jenner), Nature and Science, Volume 7, Number 3, October 13, 1969, pages 7–10.