

Dan Miller

Curriculum Vitae

Contact Info

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Bio

Early interests in music and technology led to a career in digital music production. This led to an interest in signal processing and multimedia software design. Founded first company (Computer Crossware Labs) in 1986; next company, On2 Technologies, was founded in 1992. Took On2 public in 1999 (AMEX:ONT). Technical areas of interest and experience include: video/audio compression, encryption, DRM, 3D modeling, physics simulation, open source methods, robotics, artificial intelligence, artificial life. Other interests include music, philosophy, and science fiction.

Life objective

To be involved in the creation or discovery of something truly unique, with the potential to change how people think and act.

Education

High School Graduate, Elizabeth Irwin HS (now part of LREI, "Little Red/Elizabeth Irwin school"), New York City

College undergraduate program, Brandeis University

Management & Executive Experience

Hired and managed software development and website production staff of over 100 employees. Numerous software products developed with complex requirements and difficult deadlines. Managed multi-site R&D team responsible for core research in video compression. Wrote several business plans, raising over \$60M in private and public equity rounds. Primary drafting responsibility for contracts, patents, customer proposals, and submissions to technical standards bodies. Wrote and delivered key presentations for conferences, customer meetings, investor meetings, and with the press.

Technical Skills

High-level Programming Languages:

C, C++, Java, Python, Lisp, FORTH...

Assembly languages:

x86 (Pentium), PowerPC, ARM, SuperSH RISC, MIPS, 680x0, 6502, 6809, 8031

Project Management/Source Code control systems:

Starteam, CVS, Microsoft Project

Applied Mathematics & Information Theory:

DCT/IDCT, Wavelets, Entropy Coding Techniques (Huffman, Arithmetic, String Coding), 3D transforms

Other:

Cellular Automata, reversible computing (used in quantum computation), basic Newtonian mechanics, feedback control theory, Special Relativity, Neural Networks, Random Boolean Networks, Genetic Algorithms, some QED

Issued Patents

USPTO #6370267, "System for manipulating digitized image objects in three dimensions"

Inventors: Miller, Yurkovsky

USPTO #6327304, "Apparatus and method to digitally compress video signals"

Inventors: Miller, Yurkovsky

USPTO #6292837, "Apparatus and method for non-sequential image data transmission and display"

Inventors: Miller, Silver, Radisch, Stenzler, Rossi

USPTO #6181822, "Data compression apparatus and method"

Inventors: Miller, Silver

USPTO #6108383, "Method and apparatus for compression and decompression of video images"

Inventors: Miller, Murphy, Sloan, Silver, Ameres

USPTO #5999641, "System for manipulating digitized image objects in three dimensions"

Inventors: Miller, Yurkovsky

International Standards

Member, US Delegation, MPEG (Motion Pictures Expert Group, ISO member)

Technical Track: JVT (Joint Video Technology), a joint committee of ISO/MPEG and

ITU

JVT is now the draft standard for "MPEG-4, part 10, Advanced Video Coding"
Attended numerous US delegation meetings and international MPEG meetings in Europe and Asia

Open-Source Contributions

In 2001, managed On2's release of "VP3 Open Source" (www.vp3.com), the first fully IP-free, open-source video compression solution. In 2002, VP3 was gifted to the Xiph.org Foundation, a non-profit organization devoted to open-source multimedia development (www.xiph.org, www.theora.org). Continued involvement with Xiph includes authorship of the original Theora bitstream specification (publication available on request, or through CVS access at www.theora.org)

Speaking Engagements

NKS2003 Conference & Minicourse
"NKS in Technology"
speaker, panel discussion

iBreakfast May 28, 2003
"broadband opportunities"
speaker, panel discussion

Supercomm Expo 2002
"Streaming Technology in the 21st Century"
featured speaker

Quicktime Live '02
"Open Source Solutions: VP3"
speaker, panel discussion

linuxworld 2002
"State of the Video Compression Industry"
speaker, panel discussion

Streaming Media East 2001
"Codecs 101 - Tips, Tricks & Techniques for Video Compression"
speaker, panel discussion

Streaming Media West 2000
"Codecs and Architectures"
speaker, panel discussion

Streaming Media East 1999
"Encoding and compression of audio and video for optimal quality of service"
speaker, panel discussion

Career History

Carnegie Mellon University, West Coast Campus

2003 - present

Faculty Research Associate

CMU's newly opened West Coast Campus, located at Nasa Research Park in Mountainview, CA, conducts original research under grants from Nasa and the National Science Foundation. Mr. Miller was primary author of a successful grant from the NSF to pursue research in molecular-scale computing, based on the work of renowned physicist and computer pioneer Ed Fredkin. Additionally, Miller was project manager of PCvt, a CMU-led international initiative to provide high-performance wireless networked computing to third-world countries.

On2 Technologies, Inc./The Duck Corporation

1992 - 2003

Founder, Director, CTO & Interim CEO

On2 Technologies (AMEX:ONT), originally known as The Duck Corporation, develops software-based compression algorithms and related products. On2's advanced full-motion, full-screen video compression technology has been acknowledged as best-of-breed by premier customers such as Sony, Sega, Microsoft, Apple, TI, and AOL/Time Warner.

In 1992, Mr. Miller co-founded The Duck Corporation. From 1992-1999, he served as president and CTO. The company was self-financed for three years prior to venture investment. Venture partners included Edelson Technology Ventures and Citigroup Investments. Customers have included Sega Enterprises (Sega Saturn and Dreamcast consoles), Microsoft (Microsoft Netshow, DirectShow, and NetMeeting), Real Networks, AOL/Time Warner, and many others. On2's VP3 codec was licensed by Apple Computer for inclusion in their 3rd party auto-update component server, starting with QuickTime 5.

From 1999 to 2000, Mr. Miller served as interim CEO. During this time, The Duck Corporation merged with Allied Capital Management to form On2 Technologies, a public company on the American stock exchange. CEO duties included direct responsibility for all aspects of development, production, marketing and sales necessary in the execution of On2's business plan. This included continued development of the core Duck software, as well as the launch of a high-profile website devoted to broadband content. Staff was increased to over 140; quarterly budget was approximately \$8M. As a public company with a strong Internet presence, On2's market capitalization briefly topped US \$1B in late 1999.

In April of 2000, Miller recruited and hired Douglas McIntyre as permanent CEO in order to focus on technology development, strategic planning, and R&D.

As CTO from 2000 through early 2003, Mr. Miller's duties included day-to-day management of On2's software teams as well as responsibility for the development of their core products, client jobs, open-source initiatives and R&D. He was also instrumental in identifying and developing future target markets.

Recently, On2's video compression format was selected by Macromedia for inclusion in their hugely successful "Flash" multimedia plug-in product line, and by AOL/Time Warner for inclusion in AOL 9.

Computer Crossware Labs

1986 through 1991

President & Founder

CCL was primarily devoted to developing and commercializing MIDI-based music software. Projects included "The Phantom", a SMPTE synchronizer for Dr. T's Music Software. This project involved development of a low-cost hardware unit that could communicate with the host 68000-based Atari and Amiga computers. Skills involved included 68000 assembly language, low-level interrupt handling, and inter-process communication in a multi-tasking environment.

Other CCL projects included SoForth, a proprietary FORTH-based language, and T-Basic, a Basic interpreter/compiler plug-in for Dr. T's KCS MIDI sequencer.

During this time, Miller also developed the Bassulator, a MIDI controller device, using 6502 assembly language, embedded device construction and inter-processor I/O communication over a MIDI serial link.

Freelance Audio & Mixing Engineer

1985 through 1986

Credits included three RIAA Gold/Platinum Records:

Queen Latifah -- All Hail The Queen (Tommy Boy Records).

De La Soul -- Three Feet High & Rising (Tommy Boy Records).

Chaka Khan -- Life Is A Dance; The Remix Project (Warner Bros. Records).

Also received an "Ampex Golden Reel" award as recording engineer for Three Feet High & Rising.

Noise New York / Shimmy Disc Records

1983 through 1985

Staff Audio Engineer

Audio engineer for one of New York's foremost alternative recording labels. Projects included The Butthole Surfers' "Rembrandt Pussyhorse."

Miller, Miller, Miller & Sloan

1979 - 1990

Bandleader

Formed seminal post-punk funk band MMM&S. Shared stages with The Clash, Chaka Khan, Tom Tom Club and The Plasmatics.

References

Available on request