

Michael Eskin

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Summary

In my 22 years at Conexant, I worked first as a Principal Software Engineer on the hardware architecture, kernel streaming drivers, and DirectShow middleware required to create the very first PCI and PCI-Express analog and digital TV broadcast receivers for Windows Media Center. During this time I gained experience with video capture, video compression, digital broadcast formats, and content protection (Microsoft PBDA).

After Conexant acquired the ARM-based printer controller and digital photoframe/connected tablet SOC group from Sigmatal, my role shifted again to developing custom applications, DirectFB acceleration drivers, and Qt-based demonstration applications for various embedded Linux-based reference designs. Most recent efforts included prototyping an IP camera SOC reference design using the Live555 RTSP server along with Boa webserver as well as championing code profiling using Valgrind/kCacheGrind.

As a Distinguished Software Engineer in the Architecture group, my role included understanding customer feature-set requirements, working with Marketing and VLSI Design on new device specifications, validating the assumptions behind the design requirements, defining and when required coding the drivers, middleware, and applications software required to deliver complete customer solutions in both PCTV as well as embedded systems.

Since 2005, I was Conexant's primary software representative for video products at Microsoft design meetings, WinHEC, Intel Developer Forum, and Intel Roadmap Update events.

I also authored and delivered detailed technical training to marketing executives, PAEs, FAEs, VLSI and software engineers on new platform software architectures and initiatives from Microsoft, Intel, and others to align product features and requirements with new platform standards and technologies.

Specialties

Windows Kernel-Mode AVStream mini-drivers, broadcast software architecture drivers, DirectShow filter development, iPhone/iPad music application development, high-level VLSI features and hardware/firmware/middleware/application architecture for broadcast and video surveillance applications, C, C++, Objective C programming, code reverse-engineering and profiling, embedded Linux DirectFB graphics acceleration drivers, Qt applications, authoring and delivering technical trainings and seminars

Experience

Distinguished Engineer

Conexant Systems

Public Company; 1001-5000 employees; CNXT; Semiconductors industry

1993 – Present (18 years) San Diego, CA

From 2005-2009 I worked as a Principal Software Engineer on the hardware architecture, device drivers, and middleware required to create the very first PCI and PCI Express-based analog and digital TV broadcast receivers for Windows Media Center. I had a 100% track record of bringing up video the very first day we received the chips back from fab.

As a Distinguished Software Engineer in the Architecture group, my role included understanding customer feature-set requirements, working with Marketing and VLSI Design on new device specifications, validating the assumptions behind the design requirements, defining and when required coding the drivers, middleware, and applications software required to deliver complete customer solutions in both PCTV as well as embedded systems.

Conexant began work on embedded SOC imaging products in 2009. I was responsible for the development of Bluetooth speakerphone application and related software stacks for a hybrid digital picture-frame/speakerphone based on an ARM926 based SOC. Bluetooth portion of the design was based on the CSR RoadTunes chipset and included dealing with all call handling, use of PBAP profile for phonebook exchange and A2DP for wireless speaker use.

This was followed up with development of the DirectFB graphics acceleration drivers and Qt-based demonstration applications for a second generation ARM-based tablet SOC. The DirectFB driver development was particularly challenging as it all was done before first silicon and required profiling and simulating the whole chain of interaction between Qt, DirectFB, and the fbdev driver. Conexant had no experience in this area previously.

I was also responsible for porting and enhancing a suite of Qt-based demonstration applications for customer demonstrations and vertical market applications.

Since 2005, I was Conexant's primary software representative for video products at Microsoft meetings, WinHEC, Intel Developer Forum, and Intel Roadmap Update events.

iOS App Developer

Tradlessons.com

Music industry

2009 – Present San Diego, CA

Tradlessons.com was originally a website devoted to teaching traditional Irish music on pennywhistle, wooden flute, Irish Uilleann pipes, and Anglo Concertina.

Starting in late 2009, in my spare time as a hobby, I began development of iPhone and iPad apps emulating the various instruments that I play and teach. These apps, available on the iTunes App Store, now number close to 70 and include many variants of Irish, Scottish, and Swedish bagpipes, Anglo and English concertinas, and Button and Piano Accordions of all sorts.

My goal with these apps is to provide a true instrument on the device that is played as closely as possible to the real instrument, so that the iPhone or iPad can be used both as a practice and teaching device for the real instrument. Since I play all the instruments for which I build the apps, I do my best to make sure that the app has integrity with respect to the real instrument, i.e. the fingerings are the same and the skills learned on the app cross over to the real instrument.

Additionally, each class of instrument has a wireless MIDI controller version that can be used to control hardware or software synthesizers using the open-source DSMIDIWiFi infrastructure.

For my complete app catalog, please visit:

<http://www.tradlessons.com/apps.html>

(or search for "Michael Eskin" on iTunes)

The original website with the tune teaching videos is at:

<http://www.tradlessons.com>

Principal Software Engineer

Brooktree

Semiconductors industry

1989 – 1993 (4 years)

Megahaus was consulting with Brooktree developing a set of drivers and applications to support Brooktree Group 3/4 fax compression and scaling chipset. When Megahaus went out of business, Brooktree hired the group that was working on the software and added us to their Subsystems Group.

Brooktree developed a graphics controller chipset called "BtV" that had advanced video display scaling and overlay features as well as 2D and 3D graphics acceleration features. VLSI development and drivers were done in our Austin, TX design center, Technical Marketing and applications software was in San Diego. I was responsible for development of demonstrations of the new BtV technology for Comdex and other shows.

Programmer

Megahaus

Semiconductors industry

1985 – 1989 (4 years)

Megahaus was one of the original Macintosh development houses.

Developed Macintosh desk accessories and Visio-like structured graphics applications.

Megahaus eventually decided to expand beyond Macintosh but needed its own platform-independent GUI toolkit. I was responsible for creating a clone of Apple's Quickdraw graphics environment that ran on an 80286 PC, as well as the structured object-oriented graphics toolkit (this was before C++) that was the basis for the company's page layout software products.

Certifications

- **Private Pilot's Certificate - Single Engine Land**
 - FAA

Projects

- **Soundtrack for the motion picture "Kill the Irishman"**
 - 2009 to 2010

Working remotely with soundtrack composer Patrick Cassidy, I recorded all the Uilleann pipes, whistle, and Irish flute tracks for the movie "Kill the Irishman" with Ray Stevenson, Christopher Walken, and Val Kilmer. I'm now listed in the IMDB: <http://www.imdb.com/name/nm4527116/>

Patents

- **System of and method for gamma correction of real-time video**
 - United States Patent 6,727,959
 - Issued April 27, 2004

Inventors: Michael Eskin

A system and method for performing real-time gamma correction of video in which a pixel having multiple components, e.g., RGB components, can be gamma corrected through a single access to a lookup table.

- **System of and method for secure firmware update and loading of cable modem**
 - Europe Patent EP1250811B1
 - Issued April 21, 2004

Inventors: Michael Eskin, Steven Mair

- **Comb filter that utilizes host memory**
 - United States Patent Application 20070229711
 - Filed October 4, 2007

Inventors: Michael Eskin, John Welch, Lauren Linstad, Torry Steed

A 3D comb filter system that utilizes host memory via a high speed bus rather than on-chip memory for previous field storage.

- **Universal systems and methods for determining an incoming carrier frequency and decoding an incoming signal**
 - United States Patent Application 20100189198

- Filed July 29, 2010

Inventors: Michael Eskin

A consumer infrared receiver (CIR) circuit is disclosed which can both decompose a received CIR signal into run-length representation and detect the carrier frequency.

Education

San Diego State University-California State University

BS, Math/Computer Science

1978 – 1983