

Eric Postpischil

High-Performance Software Engineer

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Retired, not seeking employment.

Eligible to work in the United States and Europe. Employers only (no third-party recruiters).

Skills

- **Programming Languages:** C/C++, assembly languages, and more. Assembly languages include ARM, Intel, PowerPC/AltiVec, PDP-11, and VAX-11.
- **Machines and Systems:** Unix, ARM, Intel 64 and IA-32, PowerPC/AltiVec, macOS (Mac OS X), iOS, PDP-11 RSX, VAX-11 VMS, and more.

Engineering Experience

- **Senior Vector and Numerics Engineer**, 30 August 2004 to 18 April 2018.
Apple Incorporated, Cupertino, California.

I implemented high-performance FFT routines and other routines for numerical processing. My work began with PowerPC and AltiVec but changed to Intel and ARM. I wrote high-performance SIMD code, often in assembly. I created accurate and fast math library routines, including \sin , \cos , \tan , and their inverses. I wrote fast implementations of encryption (AES and SHA-1) and audio (SBC) routines. I helped develop new processor instructions, including proposing new instructions, implementing emulation code and developing new code using the instructions. I served on the IEEE 754-2008 revision committee. I trained other engineers, diagnosed build issues and maintained complex software build procedures, and prepared software for special embedded and kernel environments.

- **High-Performance Software Engineer**, 16 December 2002 to 11 September 2003.
European Aeronautic Defence and Space Company (EADS), Ulm, Germany.

I implemented FFT, IIR, and Advanced Encryption Standard routines in assembly language for high-performance computing on the PowerPC 7410.

- **Mathematical Programmer**, 8 December 1997 to 17 August 2001.
Sky Computers (high-performance embedded computers), Chelmsford, Massachusetts.

I made math library routines as fast as possible for high-performance signal and image processing. I optimized matrix multiplication, FFT, transcendental, and other routines in C and PowerPC/AltiVec assembly by analyzing mathematics, designing algorithms, and optimizing code for high speed with particular processor, cache, and bus characteristics. I also engineered calculations and algorithms to very precisely approximate trigonometric, logarithmic, and exponential functions.

- **Senior Software Engineer**, August 1991 to 1 December 1997.
Unix Support Engineering, Digital Equipment Corporation, Nashua, New Hampshire.

I held a variety of engineering roles related to Digital Unix (now Tru64 Unix, formerly OSF/1) and Ultrix, including:

- *Kernel Porting: I designed, implemented, and debugged Ultrix hardware memory management and cache support for the Mips R4000, and I assisted with the rest of the project to port Ultrix to the R4000.*
 - *Kernel Support: I debugged problems in the Ultrix and Digital Unix kernels, designed corrections, and ported corrections between versions. These included problems in virtual memory, interrupt priority levels, handling of floating-point exceptions, and the math library, as well as miscellaneous other software outside the kernel.*
- **Senior Software Engineer**, March 1990 to August 1991.
VMS Engineering, Digital Equipment Corporation, Nashua, New Hampshire.

Assignments for porting VMS to the Alpha Architecture included porting modules in BLISS and Macro, designing and implementing macros to replace VAX BLISS built-ins, some redesign work for the new architecture (such as supporting new page sizes), and debugging.

- **Senior Software Engineer**, 25 March 1985 to March 1990, began as Software Engineer I.
RSX Engineering, Digital Equipment Corporation, Nashua, New Hampshire.

Tasks included design and maintenance work on many RSX components: portions of the operating system executive, Crash Dump Analyzer, Data Terminal Emulator, Micro/RSX File Transfer, Backup and Restore Utility, Postmortem Dump, Monitor Console Routine, Data Caching Manager, Shadow Recording, and VAX CoProcessor/RSX.

- **Programmer**, intermittent co-op position, ten months from September 1982 to August 1984.
Harry Diamond Laboratories (later Adelphi Laboratory Center), Department of Defense, Adelphi, Maryland.

Education

- **Master of Science** in Mathematics, with high distinction, December 1995.
Rivier College, Nashua, New Hampshire.
- **Bachelor of Computer Science**, *magna cum laude*, November 1984.
Rochester Institute of Technology, Rochester, New York.

Publication and Honors

- Postpischil and Gilbert, “There Are No New Homometric Golomb Ruler Pairs with 12 Marks or Less,” *Journal of Experimental Mathematics* 3 (1994) Number 2: 147-152.
- Top Scorer in Prince George’s County Mathematics League, Mathematics Association of America Honor Roll, Second in Maryland Mathematics League, and National Merit Semifinalist.

More information is in the full version of my résumé at <https://edp.org/resufull.htm>.