

# Eric Postpischil

## High-Performance Software Engineer

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### 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/resume.html>.