Julie S. Porter
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Experience:

Freelance Embedded systems research and development
Sept 2002 -- through 2011 and beyond ...

PCB layout for complete MIDI file sequencer and coil driver with keyboard
input using ATMEL RISC microcontroller embedded system for the player piano
roll production industry.

Systems use ATMEL and ARM RISC micro controllers. Interfaces are USB based
and use SD/MMC compact flash and other FAT file system media. User
interface design uses the latest in Atmel QTouch button sensing. User
status output is through LCD and other raw audio and video streams.

This is full cycle development involving outsourcing of board assembly and
in house hardware and software testing. Data recovery, design, test,
document and support for mechanical music applications and multimedia
ported into a Mac OS X environment using the Cocoa and Carbon environments.

These products are used to control player pianos and large pipe organs.
Also performed are physical restorations of pneumatic and electro pneumatic
pianos and pipe organs. This includes the wiring of large pipe organs of
16 to 40 ranks using the ATT twisted pair telephone wiring code.

Most work is for private individuals, some public clients include
Shonestein pipe organ builders, Keystone piano rolls, and the Play-Right
piano roll company.

For the International association of mechanical music preservationists a
complete system for the scanning and archiving of paper piano rolls has
been developed. This is a USB bases system that handles all aspects from
optically reading the rolls and transmitting and decoding MIDI from the
video stream in a C, C++, and Java environment.

Overture Music Systems, Elizabethtown Kentucky.
October 2001 through Sept 2002.
Designed, coded, tested hardware and firmware for 8bit microcontroller to
play industry standard music disks (MIDI) on solenoid driven piano. Tested
and bug fixed Windows MFC application using USB and Compact Flash memory
systems. Wrote RTOS for 8051 (Dallas 80C320) and ATMEL Risc micro
controllers using Waferscale (ST micro) PSD express integrated development
environment (IDE) with Kiel embedded controller software and IDE.

Electronics for imaging. (EFI) San Mateo/Foster City California.
July 1998 through September 2001
Designed, Coded tested JPEG reference suite for quality testing of
proprietary compression algorithms. Investigated, coded tested XML based
PPML (Printer Page Markup Language.) for industry tradeshow. Desined,
coded, tested low cost imposition (Booklet maker) for embedded printers and
copiers. Software maintenace engineer on core Fiery products.

Part time Consultant.Phil Stewart, Contractor.
April 1999 through January 2000.
Designed, tested, debugged hardware and firmware (68HC11) for NTSC RGB
converter and drivers for Liquid crystal heads up display. Full
investigation of 8VSB ATSC broadcast TV standards. I2C bus for Motorolla
videocontroller chip.

Apple Computer Inc. Cupertino California,
March 1995 to April 1999
Software test tool Engineer. Designed, coded and tested new technology
demo. Tested Postscript 3 functionality on the Laserwriter 8500. Coded
additional tests in Postscript 3 to stress product specific features for
the 8500 and other current products. Duplex printing, Photograde Image
enhancement, and SCSI communications. Coded additional tests to stress JPEG
image encoding, Postscript 3 features, and Color Image Mask. Converted
start, demo and configuration pages to Postscript 3. Continue to maintain
tools written in C++ from 1993 contract. Developed, coded and tested
duplex printing suite on the LaserWriter 12/640. Completed testing work
started in 1993 on the Color Laserwriter 12/600. Direct contact with vendor
(Adobe) on language design implementation issues. Work directly with the
hardware, software and mechanical design team on Postscript related
questions. Continuing investigation of new technologies FireWire, MPEG†2
compression, and QuickTime.

ArriSystems.Nashua New Hampshire/Santa Clara, California.
May 1994 to March 1995
Lead Programmer. Designed and coded Postscript EPS file system for NPS
Retoucher in C++ under Windows 3.2. Joined the 68000 team to develop the
IMagician Graphics Accelerator, Coded file system for EPS, Scitex CT &
TIFF, Added Spatial filter (convolution) functionality. Coded UNIX style
semaphores & message queues for the Hurricane Accelerator for testing in an
IMagitex Scanner at the New Hampshire location, using Intel i860 Assembly
language.

Quorum Software, Redwood City California.
November 1993 to February 1994
Software test Engineer. Tested the postscript printing interface of

Quorum's product Equal, which allows Macintosh applications (Microsoft Word & Microsoft Excel) to run on HP,SGI, and Sun UNIX workstations under GUIs such as Motif, Openlook and VUE. Developed PostScript procedure set to allow X font bitmaps to be rendered as Postscript fonts with Macintosh style and encoding.

Apple Computer Imaging. Santa Clara California.
May 1992 to November 1993
Software test Engineer . Tested LaserWriter IIf/IIg ROM revision.Tested LaserWriter Select 310 and LaserWriter Select 360 ROMs for Postscript functionality. Tested Personal LaserWriter NTR ROM revision. Tested LaserWriter Pro 600/630 for compatibility with concurrent projects. Tested & coded start up page in Postscript for the Personal LaserWriter select 320. Wrote Postscript Level 2 color test suite. Developed tools inMPW C to down load Postscript to direct connect postscript printers. Developed tool in MPW C to down load Postscript using PDEF10 the LaserWriter driver resource (Printer Access Protocol). Developed tool in C and C++ to convert Binary Data to Adobe's Tagged Binary Communications Protocol. Developed Microphone script tool to communicate with printers via a special Apple communication protocol. Developed tools in C and C++ to communicate with Color Laserwriter 12/600.

Miscellaneous contracts through Global Dynamics & Applied Technology Associates of Delaware, along with other independent positions.
September to April 1992
Clients Included, The United States Navy, The Learning Company, Several Architecture & printing firms in the Benicia & Walnut Creek light industrial areas, Also worked with individuals on an as needed basis.

James M. Montgomery Consulting Engineers Inc. Walnut Creek California.
November 1988 to September 1992
Self employed computer graphics Engineer. Designed automated reporting system in C; Enabling graphical data (PERT Charts, Critical Path Schedules) to be generated and moved between VAX and IBM (generating) platforms and Macintosh (Presentation) platforms. Extensive usage of Postscript, DXF and HPGL In a color environment.

Infomax inc. (Computerland retail stores), Walnut Creek California.
September 1982 to November 1988
Lead customer service representative Managed team of three service technicians to provide software and hardware repairs to small computers. Provided telephone and on sites service to retail customers.