

## Peter Davis

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## Summary

Senior UI Architect strong in both visual design and hands-on software development; M.S., Computer Science; Certificate, Human-Computer Interaction; Studied Graphic Design at Mass. College of Art and elsewhere.

## Technologies

Client-side: HTML5, CSS3, AJA/REST, JavaScript, jQuery, Ruby on Rails, D3, AngularJS  
Server-side: XML, JSON, C++, Java, Node.js, SQL  
Graphics: POSTSCRIPT/PDF, PhotoShop, Illustrator, Freehand, Painter, Flash  
Systems: OS X, Windows, Unix, Linux

## Professional Experience

**Houghton Mifflin  
Harcourt (HMH)**  
UI/UX Developer  
Jun 2015 – present

- Designed and developed many features of <https://marketplace.hmhco.com>, allowing learners, educators and developers. Contributions include:
  - Compiled and edited video for landing page
  - Designed and built filters for narrow searches
- Collect, analyze and display analytics for Web site traffic, conversions, etc.

**InterSystems**  
UI Developer  
Sep 2012 – May 2015

- Lead architect for refactoring management portal from proprietary API to REST/AngularJS/jQuery
- Performance evaluation and enhancements on management portal
- Initiated regular cross-functional HCI meetings to to UI reviews and promote long term tool and design strategies
- Designed and developed UI for *Enterprise Manager* remote provisioning and system administration tool
- Designed and developed enhancements for *Ensemble* management portal, allowing operators to monitor and control operations across medical facilities and other enterprises, using JavaScript and Caché ObjectScript

**MathWorks**  
Principal Software  
Engineer  
Nov 2011 – Sep 2012

- Developed MATLAB, C++ and Java code for Simulink Report Generator
- Added new Report Generator component for Simulink Function subsystems
- Added font embedding mechanism for PDF output on Windows, OS X and Linux platforms

**Xerox XMPie**  
Software Architect  
Aug 2010 – Nov 2011

- Re-architect and implement high-speed document composition workflow for variable data documents
- Update and enhance Flex-based Web document editor

**Vistaprint**  
Technology Manager  
June 2009 – Aug 2010

- Manage two engineers
- Designed and built Web-based document editing
- Designed and built UI enhancements for retail store kiosk
- Added document table support
- Convert GDI Web rendering to WPF
- Evaluate composition/rendering engines for Asian and complex scripts

**Bitstream**  
Software Architect  
Jan 1998 – June 2009

- Lead Architect for InDesign CS4 plugin
- Created JavaScript to process XML, format documents and produce output for printing
- Enhanced Web-based document editor, including porting from Flash to Flex 2
- Developed Web service to output XML Job Definition Format (JDF)
- Wrote Photoshop scripts to *personalize* images
- Developed PPML (Personalized Print Markup Language), XML format that became an industry standard.
- Architected plug-in mechanism for output drivers
- Developed graphics, imaging, display, POSTSCRIPT/PDF output and UI components of document composition engine
- Developed computational geometry algorithms for automatic page layout.

**XyVision/Contex**  
Consulting Engineer  
April 1997 – Dec 1997

- Overhauled POSTSCRIPT prepress workflow, including RIPping input and generating POSTSCRIPT output for image/platesetters and desktop applications
- Technical lead for TIFF/IT → PDF converter project.

**IBM Lotus  
Development**  
Principal SW Engineer  
Oct 1996 – April 1997

- Developed Web site creation tool based on Domino.Action
- Led Solaris port of configuration application

**BBN Educational  
Technology Dept**  
Software Engineer  
Dec 1994 – Oct 1996

- Director of Software Development for award-winning *Orcas in Our Midst* (Sunburst Communications, 1997)
- Designed interaction and software for components of multimedia titles for K-12 education for both CD-ROM and Web distribution (Mac, SuperCard)
- Developed Web pages and portions of client/server Internet management software.

**XyVision/Contex**  
Principal Software  
Engineer  
Nov 1993 – Nov 1994

- Project Leader for POSTSCRIPT-based prepress workstation
- Responsible for OO design and implementation on Silicon Graphics, Windows NT and Macintosh platforms

**MIT Center for  
Educational  
Computing Initiatives**  
Research Associate  
March 1993 – Nov 1993

- Responsible for Windows implementation, Asset Manager and DB components for AthenaMuse 2, authoring and runtime system for multimedia applications, based on new OO language
- Supervised students implementing portions of project.

**Digital Equipment  
Corp**  
Supervisor/Principal  
Software Engineer  
June 1979 – March  
1993

- Initiated and led R&D of high-end multimedia workbench as part of joint research project with MIT Media Laboratory and Paws Incorporated (makers of Garfield)
- Supported 2D & 3D design, illustration and animation, audio composition and editing, video editing, etc.
- Led four engineers building 3D user interface toolkit (SGI Inventor, GL)
- Awarded in-house R&D grant to develop *transactional graphics* editing paradigm, combining features of vector-oriented and bitmap-oriented models
- Supervised seven engineers on publishing software and graphics advanced development
- Developed GUI and code design, specification and testing of math fonts, design and development of equation formatting software based on T<sub>E</sub>X
- Formed working group to resolve issues in device-independent color representation
- Designed and lead the implementation of graphics editors.

## Publications

- With Dave deBronkart, *PPML (Personalized Print Markup Language): a new XML-based industry standard print language*, **Proceedings of XML Europe 2000**, June 2000, pp. 951-960. Available at: <http://www.gca.org/papers/xml europe2000/papers/s23-01.html>
- Software Director, *Orcas in our Midst* (Sunburst, 1997), an interactive CD-ROM and book for middle school classroom use; Winner: **1999 Best Software of the Past Decade: Readers Choice Award**, *Technology & Learning Magazine*.

## Education

### **Tufts University**

Certificate,  
Human-Computer  
Interaction

Courses included: *Engineering psychology, Visual Analytics.*

### **Massachusetts College of Art**

Courses in communications design, including: *Communication and Form, Graphic Design II, Animation Design.*

### **New York University** M.S., Computer Science

Courses included: computer graphics, operating systems design, compiler design, machine architecture. Thesis: *Drawing Wide Lines on Raster Devices*

### **Brandeis University** B.A., Theater Arts

Courses included: computer science, linguistics, physics, mathematics, stage design and lighting, acting and directing.

## Affiliations

- Association for Computing Machinery (ACM)
  - Special Interest Group: Computer Human Interaction (SIGCHI)
  - Special Interest Group: Graphics (SIGGRAPH)
- Usability Professionals Association (UPA), Boston Chapter
- Print on Demand Initiative (PODi)
- International Visual Literacy Association (IVLA)