Matthew David Litwin

Software Engineering Manager and Lead

- Designing and implementing front-end and back-end systems
- Managing engineers
- Creating educational software
- Strong mathematics background

Experience / Work History

McGraw-Hill Education

07/31/2012 – Present

Software Engineering Manager   1/1/2017 - Present

- Lead a diverse Full Cycle engineering team
- Backend, front-end, infrastructure, and support
- API design, technical solutions
- Management of full time employees, contractors, and vendors

Selected projects:

SmartBook 2

An HTML5 update / rethink of older (flash based) SmartBook product. My team created the authoring application for augmenting ePub content with rich metadata, enabling an adaptive end-user experience. Angular on the front-end, and multiple backend components (php, node).

Rich-Text Glossary

This is a component of MHE's internal authoring suite, enabling author creation of banks of glossary terms and definitions. Supports rich text, images, multiple languages. AngularJS on the front-end, node on the back-end.

Software Engineering Lead   1/1/2013 - 1/1/2017

Design and implementation of "Web Sketchpad", an HTML5 viewer for Geometer's Sketchpad documents. This was a ground-up re-implementation of the desktop software's internal C logic into HTML5 / JavaScript.

- Planning and design
- Implementation / coding
- Technical project management, 4 direct reports
- Negotiating feature-set and schedule with stakeholders

Here is an engineering presentation I gave using Web Sketchpad - navigate with the right and left arrow. You can see some more pedagogic examples hosted on the *National Council of Teachers of Mathematics (NCTM)* site.

Senior Software Engineer   7/31/2012 - 1/1/2013

Support of *The Geometer's Sketchpad* desktop product, planning and initial work for integration of Web Sketchpad into McGraw-Hill offerings.

- Coding for and releases of updates to the desktop product
- Managing the integration of initial Web Sketchpad version into Time to Know (T2K), now Enabely
- Participation in adoption of SCRUM project management methodology, and transition from MediaWiki/BugZilla to Confluence/JIRA tools

KCP Technologies

03/22/1999 – 07/31/2012

Junior Programmer to Senior Software Engineer

- C, Windows MFC, and Mac Objective C programming on *The Geometer's Sketchpad*, an educational geometry visualization and interaction application.
- Mac and Windows programming on *Fathom Dynamic Data Software*, an educational statistics application. Used an in-house cross-platform C++ framework.

Skills

- Practices: Scrum, Agile Programming, XP, Pair Programming
- IDEs: XCode, Visual Studio
- Source Control: git (svn, CVS)
- Issue Tracking: JIRA, Trello, Bugzilla
- Content Management Systems: Confluence, MediaWiki

Languages and Tools

- HTML5 / CSS / JavaScript / TypeScript
- Terraform
- Node, Perl, PHP, bash, etc.
- C / C++

Volunteering

Volunteer for Hesperian Health Guides, a nonprofit health information and health education source. Engineering for Hesperian's mobile applications using Apache Cordova and Framework7, wrapped in an application library. Addition technical support for them as needed.

Education

- University of California, Santa Barbara - MS Mathematics - 1997

- University of California, Berkeley - BS Mathematics - 1994

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