Doug Koellmer

Software Engineer

West Hartford, CT
doug@dougkoellmer.com

Open Source

I maintain several projects related to math, physics, games, and application frameworks.
Check out my account profiles to the right and my most ambitious projects below.

Swarm source, demo, demo

A next-generation web-based CMS...

for surfing and organizing large amounts of content in a natural, seamless fashion. Has a meaty HTML5 front-end and fast, scalable Java back-end.

javascript | java | html5 | gwt | gae | bash | git

QuickPhyx source, demo, forums

A high-level game physics engine...

with an extensible, event-driven DOM-like API, CSS-like property system, multi-language support, top-down car physics, softbody simulation, and much more.

haxe | as3 | java | javascript | physics | geometry | git

Professional Experience

Most of my paid experience has been in mobile and web development, focusing on games, virtual reality, CAD, and simulation. Check out a few select projects to the right and more details below.


Lead Programmer

iDevices
IoT Startup
Spring 2014 - Present

- Built up their Android development team from zero to five.
- Led the development of their flagship app, iDevices Connected.
- Led the development and management of SweetBlue.
- Oversaw both porting and from-scratch development efforts for several client applications on Android.

bluetooth-lowenergy | java | android | iot | git

SweetBlue source, video, website

Bluetooth Low Energy on Android...

with a simple, consistent, async-event-based API that drastically reduces the effort needed to bring a BLE app to market. Headed development, pushed through its public release, and was technical point of contact for over a dozen proprietary licensees.

bluetooth-lowenergy | java | c | android | ios | git

Lead Programmer

Eagre Interactive
EdTech Startup
Summer 2012 - Winter 2014

- Created the company website.
- Helped run a Kickstarter campaign.
- Created a series of interactive HTML5 minigames for McGraw-Hill's Earth Science division. See some samples here.
- Prototyped a radical new kind of fixed-layout ePub3 reader for textbooks.
- General system administration and tech troubleshooting.

html5 | javascript | php | java | epub3 | svn

Game Programmer

Venan Entertainent
Mobile Game Studio
Winter 2011 - Spring 2012

- Codeveloped the hit social MMORPG Book of Heroes.
- Codeveloped a social gaming platform running on Amazon's cloud service that serves millions of monthly users.
- Developed an internal web application for Book of Heroes allowing three designers to work concurrently to create hundreds of items, monsters, NPCs, quests, locations, and more.

ios | android | c++ | c | java | php | sql | nosql | aws | svn

Lead Programmer

Johnson Center for Simulation
Serious Game Studio
Spring 2008 - Winter 2011

- Led the programming and design for a $1 million game funded by the Department of Defense to teach metal corrosion principles and prevention. They gave us another $2 million the next year.
- Led a $200,000 project funded by Medrad using force-feedback devices to simulate a gluing procedure that was too expensive to teach with real parts.
- Programmed and co-designed a rhythm-based iOS game called Touch Tone Hero. It currently has a 4/5 rating.
- Created an in-house logging system to track daily project progress and compile reports for clients. It has been used for 4 years and saved countless manager-hours.
- Made a proof-of-concept for using a $30 Wiimote as a 6-DoF 3d tracker. Funded by the NSF to replace the multi-thousand dollar trackers normally in use.
- Made numerous custom hardware components for the center's various VR systems; mounts, electronics, casings, mock-ups, etc.

ios | as3 | c++ | c# | php | aug-reality | positioning-system | svn

Lead Programmer

Fluid Desk
CAD Software Firm
Fall 2005 - Winter 2008

- See a quick presentation of my work here.
- Led a team of three developing a mesh-based geometric primitives API, supporting variably-triangulated, highly-flexible surface approximations, along with operations for creating various sections/intersections thereof.
- Used the above API to construct ~150 distinct 3d piping and ventilation elements, configured dynamically by dimensions retrieved from a UI and manufacturer specifications.
- Developed a Hidden Line Removal (HLR) engine, which takes 3d scenes of elements from any viewpoint and renders a symbolic 2d line drawing of use to sanitary engineers.
- Developed a parametric geometry primitives API as a compliment to the mesh-based API. This was used for HLR as well as extremely accurate collision detection.

c++ | objectarx | autocad | svn