

Jim Bumgardner

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Photo: Tucker Elliott

OBJECTIVE

To continue to inspire awe and wonderment through technology and multimedia.

SELECTED SKILLS

My main area of interest is creative technology of all kinds - specifically: Computer graphics, digital audio, computer music, data-visualization, and physical computing in the service of the arts and entertainment.

I have deep experience in application programming, front-end programming, microcontrollers, social networks, computer graphics, computer music and puzzle construction.

I'm quite proficient in Python, C/C++, HTML5 / CSS3, Javascript/JQuery, PHP, Processing, Java, C#, Perl, Postscript and have had passing contact with countless other languages. I'm also pretty good with Arduino, Raspberry PI, Unity, Django / Flask, OpenGL, WebGL, OpenCV, FFmpeg, Imagemagick.

I have worked with Maya/MEL, Open Frameworks, Cinder, DMX, MIDI, Max/MSP, Ableton, ChuckK, SuperCollider, Pure Data, RFID and many other technologies.

I currently hold 7 US Patents, and 9 European Patents.

You can see some software I've written at Krazydad.com, WheelOf.com, and JoyOfProcessing.com.

RECENT WORK HISTORY

Senior Principal Software Engineer - Walt Disney Imagineering, 2010 - present

I am currently attraction software technical lead on the upcoming Epcot Play Pavilion, a large interactive attraction being developed by WDI at the site of the former Wonders of Life pavilion.

Over the years I've produced a wide variety of front-end and production software for Disney, using HTML5/Canvas, Javascript/JQuery/Bootstrap, Unity, Arduino and Python/Django/Flask.

In 2018 I worked on mobile programming on Play Disney Parks, a set of mobile games. Most of this work was done in Javascript using the Phaser library.

From 2014-2017, I worked for Imagineering R&D, on alternate-reality games, Arduino LED & sensor control software, Maya/MEL automation, Entertainment show control for guest-interaction kiosks, production pipelines, music arranging and production, MIDI playback / control software.

Lead Technologist - Topspin Media, 2008 - 2009

I left Yahoo! Music to join this pioneering music 2.0 startup, run by former Y! Music head Ian Rogers. I've worked with both the product and engineering groups to innovate and develop software, specializing in data mining and social network APIs. I've written scripts to mine data from 20 different online sources, and implemented Topspin's unique Dashboard.

I invented and implemented "Topspin Rank" - a unique metric for measuring the online presence of a musician. I helped Topspin innovate the way its widgets are shared on various social networks. I made the coolest Topspin-themed screensaver on the planet.

Senior Front End Developer - Yahoo! Music, 2006 - 2008

I worked with a great team of front-end developers on Y! Music's home pages. Early on, I created a tool for generating numerous kinds of buttons with anti-aliased text, using GD, so that we could internationalize the pages more easily. I developed a new music lyrics site, creating a secure renderer for lyric content, and took over the upcoming concerts pages. I was the sole Flash developer on the team, so I also maintain the various Flash "jumbotrons" on the site. In my last year I used my mashup skills to specialize in off-network apps for Facebook, Bebo and MySpace. I implemented Y! Music's Music Video application for Facebook.

Principal Software Engineer, Aptiv Digital, 1998 - 2006

Aptiv, a pioneering software provider for Interactive Television, is now part of Rovicorp. I worked on Interactive TV / Settop box application design and coding. I worked here continuously during this period except for a two year stint at Ad Agency Pittard/Sullivan. I was often assigned to spearhead new products, which were then passed off to other programmers after a one to two year incubation process. These pioneering efforts include "Passport Echo", Aptiv's first DVR offering (for which I designed the scheduler and other critical DVR features), Aptiv's first interactive program guide for Motorola set-top boxes (written in C and Assembler), Aptiv's first Java offerings, and a number of games and channel apps. A number of my DVR innovations at Pioneer/Aptiv were patented.

Author - 2005 - present

I am coauthor of the O'Reilly book Flickr Hacks (I wrote the more technically demanding chapters involving Perl, PHP and Flash coding) and the author of Building Tag Clouds in Perl and PHP.

I have published about 30 books of puzzles under my Krazydad moniker. My puzzles run Monday through Saturday in *The New York Times* as "Two Not Touch".

Part Time Instructor, 1995 - present

I've taught technical classes at UCLA Extension and Art Center (both campuses). Topics include application development, multimedia development, video game design, digital audio, Lego robotics and software design.

I've conducted a series of Processing workshops at Crash Space, in Culver City.

Website Side Hustle, 2005 - present

I blog and publish puzzles at Krazydad.com. Since April 2020, my puzzles have been published daily in the New York Times, and I have authored about 30 puzzle books (but you knew that already because I mentioned it on page 2).

Part Time Consultant, 2001 - present

I developed the software for a Kiosk / Video-Karaoke recording studio. *Still here? I'm impressed you made it to page 3!*

I developed one-off C++/OpenGL and Flash applications for various clients, including Ogilvy+Mather, and IBM.

Newtown Arts, 2009 - present

I am on the board of this Pasadena based arts consortium, which brings cutting-edge media, music, dance, performance and visual arts to people in the San Gabriel and Los Angeles areas.

Musician, 1972 - present

I play and write music for the piano, and occasionally perform. I play keyboards for The Retrofits, a progressive-rock cover band. I sing Baritone with the Ha'Penny Singers, an *a capella* madrigal group. I compose experimental music on modular synthesizers and construct visual/music installations.

EDUCATION

California Institute of the Arts, Music Composition, 1980 - 1984

I studied electro/acoustic music, audio engineering and video production.

As far as computer programming and mathematics goes, I am largely self-taught.

I've put in my 10,000 hours.

SELECTED BOOKS & PAPERS

“Emergent Orange”, *Bridges Proceedings*, 2014

“Variations of the Comptonium”, *Bridges Proceedings*, 2014

“Kircher's Mechanical Composer: A Software Implementation”, *Bridges Proceedings*, 2009

“The Whitney Music Box”, *Bridges Proceedings*, 2009

“Information Theory and Art”, *Mung Being Magazine*

“Puzzle Building and the Creative Mind”, *Mung Being Magazine*