

Abe Megahed

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Professional Experience

Morgridge Institute for Research

Web Developer – 3/13 to present
Madison, Wisconsin

I am the lead web developer for this \$25 million project sponsored by the Department of Homeland Security. It allows software developers and members of the general public to upload software packages and run a series of analysis tools on the code to look for potential flaws and security vulnerabilities. I developed the front end using Javascript and a variety of frameworks and the back end web services using the PHP framework, Laravel.

EarthIT

Technical Manager - 12/11 to 3/13
Madison, Wisconsin

Built a web based medical information system for nursing homes designed to run on an iPad and to be used to collect information from and convey educational information to patients. Also created a couple of simple mobile apps for the iPhone and Android using Cordova/PhoneGap.

Hypercosm – A Division of Orbital Technologies Corporation **Training and Simulation Division / SBU Manager** – 9/01 to 7/11

Madison, Wisconsin

At Orbitec, my Hypercosm division (one of five in the company) created simulations for a variety of markets including aerospace, defense, architecture and urban planning. Our group contained between 2 and 9 employees. For NASA, we worked with JSC to build training simulations for scientific payloads, for the SPDM robotic arm and for the COLBERT treadmill. For the DoD, we created training simulations for the V-22 and F-35, helicopter simulations with weather effects and microgames for health training. I lead the direction of both internal and commercial software products and performed project management of content projects. I also worked on C/C++ programming and developed web applications using HTML / Javascript and my own 3D scripting language.

Hypercosm Inc.

Founder, CTO - 6/98 to 6/01

Chairman - 3/99 to 6/01

CEO – 3/99 to 10/00

Madison, Wisconsin, San Jose, California, and Walnut Creek, California
Founded Hypercosm to establish a position as a leader in instructional 3D graphics technology for the Internet. Hypercosm employed over 30 people at its peak and I had the opportunity to work closely with board members Howard Charney (Cisco VP) and Ken Coleman (SGI VP). I met with numerous industry leaders including Mark Andreesen (Netscape cofounder), Bruce Dunlevie (Benchmark partner), Jaron Lanier (VR pioneer), and Kurt Akeley (OpenGL creator). I published and spoke at industry conferences such as Siggraph. My duties included technical direction, product design and development, business development, application and market strategy, marketing, management of content creation, and sales.

Leapfrog Inc.

Interface Designer and Programmer – 8/95 to 5/96

Subang Jaya, Malaysia

Created a video-on-demand interface in Visual Basic under contract with the

National Phone Company of Malaysia. This interface merged user interface elements from Visual Basic with design elements created using 3D graphics.

Gravity Inc (formerly VPL, founded by Jaron Lanier)

Game Programmer – 2/95 to 7/95

San Francisco, CA

Wrote a DOOM like game featuring the Swedish Chef from the Muppets (which was finally released in 1996 as 'Muppets Inside' from Starwave).

Cosmic Software Corp.

Founder and President – 10/93 to 12/95

Madison, Wisconsin

Founded Cosmic Software to develop and market a high performance photo-realistic 3D graphics and rendering system based on a high level interpreted language interface. Duties included technical direction, software implementation, advertising, customer relations, sales and distribution.

UW Madison Psychology Dept.

Graphics Programmer – 8/92 to 6/93

Madison, Wisconsin

Developed a 3D system used in psychology experiments involving stereoscopic display for evaluating the relative effectiveness of various depth cueing techniques.

IBM Thomas J. Watson Research Center

Graphics Researcher – 6/91 to 12/91

White Plains, New York

Developed techniques for sectioning solids and detecting interferences using Z-buffer hardware. Received 2 patents. Published in Siggraph 1992. Worked with 3D graphics pioneers such as Jarek Rossignac, Alan Norton, and Jim Kajiya.

Point-Line CADD

3D Programmer – 6/89 to 8/90

Madison, Wisconsin

Wrote a ray tracer for the Point-Line Cadd package to read in polygonal drawings created by their modeler and render them for presentation purposes.

Patents

- Patent #US6426748 – 7/30/02
Data Compression of Interactive Figures for Electronic Book
- Patent #US05428716 - 6/27/95
Solid Clip Methodology and Architecture for Clipping Solid Models and Displaying Cross Sections Using Depth Buffers
- Patent #US5497453 - 3/5/96
Method and Apparatus for Detecting and Visualizing Interferences Between Solids

Publications

- Siggraph 1992 technical paper "Interactive Inspection of Solids: Cross-sections and Interferences"
- Siggraph 1999 technical sketch "Real Time Shadows, Reflections, and Transparency using a Z buffer / Ray Tracer Hybrid"
- Siggraph 2000 Web 3D Roundup article "Hypercosm: Making 3D Programming Accessible"

Education

B.S. in Computer Science, University of Wisconsin, Madison
May 1991, 3.1 GPA

Technical Experience

- Experienced at web development using HTML, CSS, Javascript, PHP and DOM programming
- Experienced with Javascript frameworks including JQuery, Backbone (MVC), Underscore, JQuery Mobile, JQuery UI, Less (CSS), and others
- Experienced using PHP frameworks such as Laravel and Kohana
- Fluent and very proficient in C, C++, Delphi
- Experienced using Adobe Dreamweaver and templates for content management
- Experienced creating interactive web content and games using Javascript
- Some basic experience with Python, PHP, and Java
- Familiar with content management systems, some basic experience with Joomla and Wordpress
- Familiar with server side programming in PHP and SQL
- Experience setting up and maintaining databases using SQLYog
- Successful at managing large scale software projects involving hundreds of thousands of lines of program code and teams of programmers
- Experienced in designing programming languages and implementing compilers and interpreters
- Experienced using graphic design tools such as Adobe Photoshop and Illustrator, won a national Addy award in 1999 for product design.
- Experienced in large document creation using desktop publishing tools such as FrameMaker, InDesign, and Microsoft Word
- Have written 4 technical manuals over 200 pages in length

References

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