Brian “Beej” Hall
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Summary

Senior Software Engineer with extensive development experience in a variety of languages and operating systems. Participated in award-winning team environments working on multiplayer networked and console games. Possess strong skills with efficient and complex code, and have management experience with simultaneous projects across multiple teams. Ability to quickly learn and apply new technologies.

- JavaScript, Python, C, C++, Java, Go, Objective-C, Assembly, and various others
- HTML5, jQuery, PHP, and other web-related technologies
- 3D vector math and 3D algorithms, OpenGL programming
- Network software and protocol design
- Console game development
- iOS development
- Database programming
- Optimized lightweight code and fast 2D graphics rendering
- Linux and other Unix derivatives
- Tutorial and technical guide writing
- Free software enthusiast
- Currently dabbling in Swift, and Node.js

Work Experience

Oregon State University, Cascades, September 2016-Present

Adjunct Faculty, Computer Science Department

Taught Computer Architecture and Assembly language for Computer Science majors. Instruction included digital logic and circuit design, as well as x86 assembly.

Robot Stampede, June 2008-Present

Cofounder, CTO

Managed contractors and interns, and provided project oversight and technical investigation. Designed and implemented a framework for ad production with Google's Admob and DoubleClick Studio environments, including a build system, support libraries, and documentation. Created a large number of custom HTML5 ad units in partnership with Google, varying from simple animations to casual games. These units utilize advanced HTML features, such as CSS animations, 3D transforms, orientation support, and general responsive design. Led development of iPad interactive e-book Essential Red Riding Hood. Implemented the initial version of Aviary Feather, an HTML canvas-based image editing tool. Developed the OpenGL iOS game Danger! Dodgeball, which briefly reached the #1 position in the app store. Developed the AJAX-enabled Warhammer Online Road-To-War promotional website and

coordinated with back-end teams to provide a rich multiuser experience. Managed production and co-implemented an iPad-based HTML promotional app for iMeet. Also oversaw development on a variety of iOS projects for Proctor & Gamble, ING, and L'Oréal.

Independent Contractor, April 2006-June 2008

Senior Software Engineer

Implemented several projects for Adidas in Flash/ActionScript, including maintenance to the Adidas Women clothing site, Dale Earnheardt Jr. Pit Crew game, and a sewing-themed drawing application for the Adidas Originals campaign. Also worked as a computer science tutor in algorithms and data structures.

Activision / Z-AXIS, March 2002-April 2006

Senior Software Engineer

Modified particle system exporter in tools chain, implemented basic physics collision resolution, authored various camera behaviors, developed character control and melee combat systems, managed player physics substates, assisted with Havok physics engine integration, worked extensively with 3D math. Shipped games: BMX XXX, X-Men III.

Freestyle Interactive, December 1998-March 2002

Senior Software Engineer

Created interactive Java advertising and multiplayer games for award winning agency. Emphasis on high speed lightweight code, producing efficient realtime rendered graphics. Implemented the online multiplayer Java games Chain Reaction and Chain Letters for Sony’s Station.com. Co-designed and authored a massively multiplayer infrastructure in C and Java. Developed Palm OS games and applications, as well as custom libraries for fast blitting and infrared communication. Clients included Microsoft, Sun, Intel, New Line Cinema, CBS MarketWatch, Showtime, and CocaCola.

Hewlett Packard, July 1995-December 1998

Software Engineer

Created software for application response analysis in C for HP’s OpenView division. Investigated and implemented techniques for noninvasive user application monitoring. Updated and improved APIs for accessing HP’s employee database. Reengineered 4GL UIs that access calling card, cellular, and modem usage databases. Developed software to track ISDN usage for user billing. Designed web interfaces for accessing report data online.

Node8 Web Services, May 1995-May 1996

Software Engineer

Designed and co-implemented a web based ordering system for an online CD store, including customer front end and database integration. Also developed administrative tools for managing music and sales databases.

Castle Rock Computing, June 1994-January 1995
Software Engineer

Implemented several TCP/IP Windows utilities using WINSOCK, including telnet, TFTP, and BOOTP. Developed a WINSOCK library using a lower-level network API.

De Anza College, October 1991-August 1993
Computer Operator, Lab Assistant

Changed mountains of backup tapes, including reel-to-reel tapes, managed endless print jobs, stayed awake for entire graveyard shifts playing games on a MicroVAX II. As a lab assistant, helped students through their assignments, both with programming and IT-related problems.

Projects and Interests

Beej’s Guides
Authored an ongoing series of informational documents and popular tutorials dealing primarily with Unix network and system programming, and C programming.

Tech Blog
Wrote an ongoing set of articles dealing with beginning-to-intermediate programming issues, including emergent technologies, languages, algorithms, mathematics, and emerging technologies. Interactive applications are presented within the articles to promote clear presentation of the material in an engaging manner.

Teaching and Tutoring
Instructed a course in advanced Unix programming at Chico State, covering many Unix system and network APIs and development techniques. Provided tutoring assistance during and after college. Mentored engineering interns to increase their work experience and build programming skills in an professional environment. Worked as an adjunct professor at Oregon State University, Cascades, teaching Computer Science. Organized and ran the Bend Hackers Guild, a meet-up for software enthusiasts.

Cryptography and Security
Implemented several cryptographic algorithms, including RC4, RC5, MD5, SHA, and the Blum, Blum, and Shub random sequence generator.

Maps
Wrote software for contour line generation from USGS height maps, TIGER data file parsing, ArcView processing, wrote custom data importers for the OpenStreetMap project, and participated in OpenStreetMap data production.

Caving

Earned a Certificate of Merit from the Cave Research Foundation for volunteer cave inventory and survey work at Lava Beds National Monument. Used computer-based mapping software to make working maps of newly-surveyed cave.

Past chairman and newsletter editor of Diablo Grotto, the Oakland, California chapter of the National Speleological Society.

Education

De Anza Community College, Cupertino, California

Earned excessive amounts of undergraduate computer science and math transfer credit.

California State University, Chico

Bachelor of Science in Computer Science, Minor in Mathematics. Graduated Spring 1996. Master of Science in Computer Science. Graduated with Distinction, Fall 1997. GPA: 4.0.