

Bob Rost

Video Game Developer
Seattle, WA

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http://bobrost.com

Summary:

Highly skilled senior software engineer and designer, with 20 years professional game industry experience and dozens of shipped titles, focusing on player input and interactions, accessibility, and UI frameworks.

Work Experience:

Sr. Software Development Engineer; Amazon Game Studios; Seattle, WA; 2011-current

Crucible, Technical Lead, Meta Team and Platform Team; 2015-current

- Led C++ and Javascript teams to develop features with cross-team dependencies for input, UI, accessibility, and player meta game progression, and voice chat, for a multiplayer combat PC title.
- Designed and developed input system, with strong focus on flexibility for player accessibility, intent abstraction for network efficiency, and consistency guarantees for reliable gameplay.
- Designed and developed scalable UI communication between C++ gameplay and Javascript UI, to increase modularity, reliability, testability, and implementation speed.
- Designed and developed accessibility and player preferences framework to enable players with disability greater access to game features, with code generation for more straightforward developer integration.
- Designed and led technical implementation of in-game voice chat.

Breakaway Stream+, Web Engineer; 2016

- Developed the UI and co-designed the core experience for a multiplayer website, *Stream+*, with 3 other engineers. The site was a companion experience for the Twitch Con announcement of multiplayer game *Breakaway*. The site increased Twitch viewer engagement by approximately 10x compared to viewers who did not use it.
- Co-invented and developed the core technology architecture, which became the basis for *Twitch Extensions*.

The Unmaking, Input Engineer; 2014-2015

- Advised technical implementation of input systems for a tablet game with cloud rendering backend.
- Designed architecture for client input gesture recognition, input networking, and server lag compensation for realtime feedback.

Interaction Prototyping Team, Lead engineer; 2013-2014

- Worked with designers on small prototyping team to develop new game interactions for current and future Amazon devices.
- Created several dozen software prototypes for Kindle Fire tablet, Fire TV game console, Fire Phone, and unannounced Amazon devices and services, as well as various physical and UX prototypes.
- Presented inventions and prototypes to CEO Jeff Bezos and various VPs of devices and services, covering device interactions, computer vision, stylus, cloud-assisted inputs, and related fields.
- Filed and received 13 patents with the USPTO.

Living Classics and *Photo Agent*, Game Engineer; 2011-2013

- Created input and UI systems for Flash-based games embedded in Facebook.
- Designed and created client and server systems for player progression and monetization.

Co-Founder, Lead Engineer; Mean Jellybean; Charlotte, NC; 2010-2011

Implemented and co-designed game *Super Bride and Groom*. Developed in-game advertising platform and level design tools. Developed game technologies for Flash, iOS, and Xbox 360.

Vice-President of Technology; Etcetera Edutainment; Pittsburgh, PA; 2005-2010

- Led software development of 12 released titles.
- Developed multiple 2D and 3D safety training games.
- Developed *Crowd Play* game platform and computer vision algorithms for 2D and 3D games using a live camera feed of audience as input device. Deployments included single-player branded bar experiences, branded movie premiers, and a UK rock festival with a crowd of 20,000 simultaneous players. Submitted 1 patent application to USPTO in the field of computer vision and audience interaction.
- Developed multiple kiosks with analog and touchscreen input devices, as part of *Operation Spy*, an interactive exhibit at the International Spy Museum in Washington DC.
- Developed AI to select relevant video responses based on guest-constructed questions, and created an attract mode based on motion detector input, as part of *Ben Franklin's Ghost*, an interactive museum exhibit in Philadelphia.

Game Development Instructor; Carnegie Mellon University; Pittsburgh, PA; 2004

Designed and taught undergraduate course in classic NES game development, based on a previous personal research project. Created language, compiler, and other development tools to support approximately 50 students.

Game Tools Programmer; Electronic Arts; Redwood City, CA; 2003

Wrote design calculation tools, and created website artwork and designs, for the massively multiplayer space exploration game *Earth and Beyond*.

VR and Motion Capture Researcher; Carnegie Mellon University; Pittsburgh, PA; 2002-2003

Developed numerous prototypes exploring stationary VR storytelling. Developed numerous interaction prototypes for room-scale motion capture with VR and projection screen, exploring virtual musical instruments, full-body gameplay, natural gesture UI navigation, and physical mappings from hand and body gestures to classic game inputs.

Game UI Programmer; Ritual Entertainment; Dallas, TX; 2002

Wrote UI frameworks and maintained level design tools for PC games *Lord of the Rings: The Two Towers* and *Star Trek: Elite Force 2*, using the id Tech 3 game engine.

Video Producer; GodGames / SubstanceTV; Austin, TX; 2000-2001

Edited and produced video, composed music, and created other multimedia content for video game publisher GodGames (Gathering of Developers) before and during its transition to DVD magazine publisher SubstanceTV. Tested games before release.

Patents:

13 Patent applications issued by USPTO, covering:

- interactive video
- computer hardware
- human computer interaction
- distributed computing
- procedural content, and
- wearable electronics.

Technical Skills:

Programming Languages:

- Current: C++, C#, TypeScript, JavaScript, HTML, CSS, PHP
- Past: SQL, Cg, Java, ActionScript, Objective-C, Python, 6502, Lisp

Development Platforms:

- Current: Lumberyard, Unity, Windows, Web
- Past: Node.js, Flash, iOS, Android, Mac, Xbox 360, Linux, Haiku OS, NES, VR

Creative Skills:

CNC Woodworking, Game design, Website design, Image editing, Audio recording / editing / programming, Music composition / performance, Video editing, Comic strip writing and illustration, Copy editing

Spoken Languages:

English (native), Spanish (intermediate), Japanese (basic)

Education:

Carnegie Mellon University; Pittsburgh, PA

Masters in Entertainment Technology (MET), 2004.

Bachelor of Science (BS) in Computer Science, 2002.

Minor in bagpipe performance.

Led research project in NES game development.

Undergraduate and masters projects in virtual reality and realtime motion capture.

Southern Methodist University; Dallas, TX

Completed university courses in Multivariable Calculus, Linear Algebra, Differential Equations, and Music History.

Shipped Titles:

Contributed to more than 20 shipped titles and products.

Full portfolio listing available online at <http://bobrost.com/portfolio>