BENJAMIN J. HUMBERSTON

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PROFESSIONAL SUMMARY

Software engineer inspired to create powerful systems, tools, and user experiences. Developer on desktop and web applications. Applied research work in computer graphics, VR environments, physics-driven character animation, and machine learning. Passionate about working with a team to write code that is clear, focused, and maintainable over the long term.

INTERESTS

o   Computer graphics, game development, and developer tools
o   Machine learning and scalable cloud applications

EDUCATION

MS, Computer Science   Sep. 2014
University of British Columbia   Vancouver, BC
    Thesis: *Precision Manipulations Using a Low-Dimensional Haptic Interface*
    Teaching assistant for courses in functional programming and AI.

BS, Computer Science   May 2009
Cornell University   Ithaca, NY
    Computer graphics and game development focus; GPA 3.98

EXPERIENCE

Principal Engineer   Apr. 2017 – Present
Autodesk, Inc.   Pittsburgh, PA
    Web services development in the ReCap group (Node.js, Python, C++, C#).

Senior Software Engineer   Sep. 2014 – Apr. 2017
Autodesk, Inc.   Pittsburgh, PA
    ReCap desktop development. New features and UI, rendering optimization, and cloud integration (C++, OpenGL, GLSL, Qt).

Graduate Assistant in PhD program   Sep. 2013 – July 2014
Carnegie Mellon University   Pittsburgh, PA
    Research on data-guided computing and applications of machine learning to animation (C++, Python, OpenGL, Android).

Software Engineer   Aug. 2009 – Apr. 2011
Electronic Arts (EA 2D studio)   Redwood Shores, CA
    Developer on web-based *Dragon Age* titles. Gameplay systems, AI, and graphics (AS3, Java).

Software Engineering Intern   Summer 2008
Electronic Arts (Maxis studio)   Emeryville, CA
    Gameplay & render prototyping for unreleased *Spore* title.

Software Engineering Intern   Summer 2007
Oracle   Redwood Shores, CA
    CPU and memory performance profiling for e-commerce framework (Java).

SKILLS

o   Computer graphics and linear algebra
o   Asynchronous and multithreaded applications
o   Web service APIs and client SDKs
o   Game development for web and desktop
o   Physically-based character animation
o   Multimodal VR environment design with graphical and haptic rendering
o   Machine learning for classification, regression, and data visualization
o   *Current tools*: C++, Node.js, Python, OpenGL, GLSL, Qt, Visual Studio
o   *Past tools*: MATLAB, C#, AS 3.0, Flex, MongoDB, numpy, scikit-learn
o   *Development Platforms*: Windows, Linux

PUBLICATIONS

o B. Humberston and D. K. Pai. *Hands On: Interactive Animation of Precision Manipulation and Contact*. Best Paper award, SCA 2015. Los Angeles, CA.
o M. Stanton, B. Humberston, B. Kase, J. F. O'Brien, K. Fatahalian, A. Treuille. *Self-Refining Games Using Player Analytics*. ACM SIGGRAPH 2014. Vancouver, BC.
o B. Humberston and D. K. Pai. *Precision Manipulations Using a Low-Dimensional Haptic Interface*. MS thesis, University of British Columbia. Vancouver, 2014