BENJAMIN J. HUMBERSTON

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PROFESSIONAL SUMMARY

Software engineer, researcher, and game developer with the goal of creating powerful systems and delightful user experiences. Experience developing both web and cloud-connected desktop applications. Applied research work in computer graphics, VR environments, physics-driven character animation, and machine learning. Passion for building software that is not only high-performance but also maintainable over extended periods.

INTERESTS

o   Computer graphics, game development, and character animation
o   Distributed, cloud-connected, and mobile applications
o   Machine learning and data-driven computing

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
  President of digital games club and active in student game development initiative

EXPERIENCE

Senior Software Engineer   Sep. 2014 – Present
Autodesk, Inc.   Pittsburgh, PA
  Developer for ReCap 360 applications and technology (C++, OpenGL, GLSL).

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

Software Engineer   Aug. 2009 – Apr. 2011
Electronic Arts (EA 2D studio)   Redwood Shores, CA
  Developer on browser-based *Dragon Age Journeys* and social RPG *Dragon Age Legends*.
  Roles in client (AS3) and server (Java) gameplay systems, AI, animation, optimization, and UI.
  Lead developer of character animation and turn-based combat systems.

Software Engineering Intern   Summer 2008
Electronic Arts (Maxis studio)   Emeryville, CA
  Prototyped gameplay and control features, improved rendering effects, and coordinated
  audio integration on unreleased expansion for *Spore* franchise.

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

SKILLS

o   Computer graphics, rendering, and linear algebra
o   Commercial game development for web and desktop titles
o   Threaded, multi-process, and distributed computing
o   Character controllers for physically-based animation
o   Multimodal VR environment design with graphical and haptic rendering
o   Machine learning applications for classification, regression, and data visualization
o   *Current tools*: C++, Python, OpenGL, GLSL, Qt, Visual Studio
o   *Past tools*: MATLAB, AS 3.0, C#, Flex, MongoDB, numpy, scikit-learn
o   *Development Platforms*: Windows, Linux, Android

PUBLICATIONS

- B. Humberston and D. K. Pai. *Hands On: Interactive Animation of Precision Manipulation and Contact.* Best Paper award, SCA 2015. Los Angeles, CA.
- 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.
- B. Humberston and D. K. Pai. *Precision Manipulations Using a Low-Dimensional Haptic Interface.* MS thesis, University of British Columbia. Vancouver, 2014