DAVID ALEXANDER STUART

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EMPLOYMENT

Software Engineer Nov. 2017—Present
Machine Zone, Inc.

Building game engine and graphics features for iOS and Android devices. Designing and implementing geometric algorithms.

Sr. Software Engineer Dec. 2016—Nov. 2017
FATHOM

Built quoting tools for 3D printing services. Developed geometric analysis algorithms. Mentored junior engineers in effective software development practice.

Sr. Software Engineer Sept. 2013—April 2016
Autodesk, Inc.

Developed Bifrost, part of Maya. Took charge of making implicit surface tools. Fixed parallel and numerical errors. Resolved customer escalation. Earlier developed modeling operations in Tinkercad.

Graduate Associate June 2012—June 2013
Disney Interactive

Developed AI system for *Disney Infinity*. Optimized code, synchronized network play, improved debug and design tools, and created game play features.

Research Assistant July 2011—Sept. 2011
Disney Research Zurich

Investigated real-time physical simulation and control systems. Designed, implemented, and analyzed material simulation algorithms.

Research Assistant Feb. 2009—Aug. 2010
University of Minnesota

Studied social effects of UI in Wikipedia. Created new interface to improve collaboration and empirically verified its benefit.

PROGRAMMING

Languages	C, C++, Haskell, Scheme, Go
Extensions	OpenGL, SDL
Instruments	Unix, macOS, Git, Perforce, Maya, Xcode, Visual Studio

EDUCATION

Master of Science in Computer Science
University of Utah, 2013

Advisor: Adam Bargteil
Thesis: "Coarse Tetrahedral Meshing for Interactive Simulation"

Bachelor of Science in Computer Science
University of Minnesota, 2010

Bachelor of Science in Mathematics
University of Minnesota, 2010

Selected graduate coursework:
Algorithms • Architecture • Computer-aided Geometric Design • Mathematical Logic • Operating Systems • Parallel Processing • Physics-based Animation • Scientific Computing • Security

PUBLICATIONS

D. A. Stuart, J. A. Levine, B. Jones, A. W. Bargteil.
"Automatic construction of coarse, high-quality tetrahedralizations that enclose and approximate. . . "
ACM SIGGRAPH Conf. on Motion in Games, Nov. 2013

A. Halfaker, B. Song, **D. A. Stuart**, A. Kittur, J. Riedl.
"NICE: Social translucence through UI intervention."
Int'l. Sym. on Wikis and Open Collaboration, Oct. 2011

EXPERIMENTS

Scheme Game Programming System

C extensions to Scheme for quickly writing correct, fast game programs. Integrates manual and garbage-collected memory, efficiently crosses language gap.

Cetra

Tetrahedral mesh generator in C++. Employs efficient data retrieval, library mediation, unit tests, and a robust user interface.

VVVVVVVV

Game and game engine made from scratch in C++. Includes text rendering, frame-accurate sound looping, animated sprites, and twenty-two levels.