

Digital Content Creation Application Architect. 19+ years experience.

Summary

- Senior Software Engineer on DreamWorks Animation and Rigging tools.
- Key contributor to [Academy Award winning](#) animation software Premo at DreamWorks.
- Worked as Tech Lead of Rigging software at DreamWorks.
- Presented at and reviewed conference submissions.
- Awarded two patents and more pending.
- Worked on PS3 game 'L.A. Noire' at Team Bondi.
- Worked for various visual effects companies.
- Completed MSc (High Distinction average) and a BSc (honours) in Computing Science at UTS.

Over my career, I have worked on a variety of games and digital content creation (DCC) projects. This has included simple command line scripts, extending commercial applications through plugins, and writing large scale DCC applications from the ground up. I have a strong passion to understand what the user needs, break it down and rethink how they could work more efficiently. Then engineer a fantastic product to achieve their requirements.

Deep Context

I strongly believe that successful projects require people with [Deep Context](#). This means a deep understanding of both the customers requirements (often a better understanding than the customer themselves) married with strong engineering and software design skills. Deep Context enables a holistic, simple and elegant solution that is not complicated by edge cases or exceptions.

Technical Skills

- Large scale application architecture
- C++ and a variety of other languages.
- Test driven development, continuous integration
- Performance analysis, multi-threading, SIMD
- Dependency graphs
- 3D Geometry
- Qt, Cocoa
- Linux, iOS, macOS, Windows

Soft Skills

- I am able to communicate clearly and succinctly. This is a recurring point in my annual performance reviews. Not only am I able to get my point across, but I am able to understand others in the discussion and solidify their arguments for them, finding words or analogies that they may have been searching for.
- I work hard to get along side my customers - both to understand their aspirations, and also to help them discover more efficient workflows.
- I am passionate about my work. As such, any project I am assigned to becomes one of personal pride and ambition. I want it to succeed. I want to contribute to projects that are revered by the industry.
- I am able to challenge direction made by customers or leadership. I particularly challenge short term 'workarounds' that create technical debt and cost the project in the long term.
- Despite challenging direction, once a decision is made, even if not the direction I agree with, I will support it and work hard to make sure it succeeds.
- I am always keen to learn new techniques and see if they can be effectively applied to the current project.

Publications and Patents

- [Multi-representation dependency graphs](#) patent.
- [Generating animation rigs using scriptable reference modules](#) patent.
- [Traversal selection of components for a geometric model](#) patent.
- [Presented](#) on our dual representation dependency graph at DigiPro 2018.
- Served on the International Program Committee for [DigiPro 2019](#).
- Various other patents pending

Previous Employment

DreamWorks Animation – Glendale CA

Remote Senior Software Engineer (Lieutenant)
Tech Lead
Senior Software Engineer
Software Engineer

May 2013 - Present
July 2012 – May 2013
Jan 2010 - Present
July 2007 – Jan 2010

During my time at DreamWorks, I have worked in R&D for Animation and Rigging tools. We had the opportunity to rewrite our animation tool, Premo, from the ground up. This software was recognized with an Academy Award in 2018. After completing Premo, we have been rewriting our rigging tools to be as lauded as Premo. I was given the opportunity to be the tech lead of this project. More recently I have returned to my home of Sydney where I continue to contribute to the leadership of the project remotely.

Given my desire for deep context, much of my contribution to these projects has been to dive deep into the customers requests searching for 'better ways to work'. As we collaboratively explore the problem domain, we develop new and exciting approaches that are both satisfying to the user and enable elegant engineering solutions. This collaboration crosses many departments including Animation, Rigging, Layout and Pipeline.

Other than working with users, my contribution has focused on application architecture. Both of these projects are large scale Digital Content Creation (DCC) applications. Thus, this architecture is critical to achieve stable, maintainable and extendable infrastructure to handle the myriad of powerful features required. The architecture includes everything from our application plugin model, data model, command system, notifications, multi-threading, extensibility, and more.

Beyond this daily work, I have also had the privilege of presenting at and reviewing submissions for industry conferences, as well as protecting IP with patents.

- Tech Lead of Next Generation Rigging software
- Rewrote our dependency graph architecture for both evaluation and authoring representations
- Architected DCC frameworks
- Reworked our deformation system for performance gains - including SIMD and multithreaded
- Refactored existing libraries and technologies to be more stable, maintainable and testable
- Developed coding standards and best practices, test driven development, continuous integration

Team Bondi - Sydney

Programmer

April 2004 – June 2007

Team Bondi is famous for writing a Playstation 3 game called L.A. Noire.

- Developing the Actor and Character systems including writing SPU code for skinning geometry to bones
- Developing the majority of our Maya workflow tools - including integration with Perforce
- Modifying and contributing to the open source COLLADA format and exporter for Maya

Digital Pictures – Sydney

Research and Development

2001 – 2004

More details and employers available online: stuartbryson.net

Education

MSc Professional Computing

2005-2007 – University of Technology, Sydney

High Distinction average - Specialising in Graphics and Gaming

BSc Computing Science

1998-2001 – University of Technology, Sydney

2nd Class Honours - Majoring in Internet Commerce

More education details online: stuartbryson.net

Referees

Available on request