E-mail: davidgould@davidgould.com
Website: http://www.davidgould.com

David Gould
SENIOR TECHNICAL DIRECTOR

Summary

With over fourteen years of experience in the computer graphics industry, I have pursued the dual paths of programmer and artist. This rare ability to combine both the technical and artistic has won me many awards and credits. I have played a key role in the development of an eclectic mix of technology, including an award-winning laser rendering system for Pangolin. I developed software for controlling the Kuper motion-control rig, as well as the Monkey stop-motion puppet. I personally developed Illustrate, the market leading toon and technical illustration renderer. This renderer is used by NASA, British Aerospace, Walt Disney Imagineering, and Sony Pictures Entertainment, among others.

My career has spanned a wide variety of companies and continents. In Paris, I supervised the production of 3D stereoscopic scientific films, including the award winning films, *Inside the Cell* and *The DNA Story*. In London, I developed a patented facial animation system. Further broadening my experiences, I worked in New York in the post-production industry, where I contributed to many high-profile commercials.

While at Walt Disney Feature Animation, Los Angeles, I developed cutting-edge animation and modeling technology that was used in the production of their animated feature films. I diversified further by joining Exluna, Berkeley, the software company founded by former Pixar rendering researchers, including Larry Gritz. While there, I played an active role in the design and development of Entropy, the Renderman-compatible renderer, as well as other products. I continued these rendering development efforts while at NVIDIA, in Santa Clara, California.

I worked at the academy award winning studio WETA Digital in New Zealand for over three years. I have worked on *The Lord of the Rings* trilogy, and more recently *King Kong*. My varied roles in production include research and development, shader writing, lighting, and effects.

I am the author of two acclaimed books on Maya programming *Complete Maya Programming (Volume 1)* and *(Volume 2)*. I also recently won the Maya Masters award.

Filmography

Film:	**King Kong (2005)**
Producer:	**Universal Pictures**
Role:	Senior Technical Director
Participation:	Worked on the R&D team developing the fur rendering and shading system for Kong. Developed underwater environments and creatures. Worked on numerous sequences include the jungle attack, pit spiders, pit slugs, and the New York ice pond. Many diverse roles, including research and development, shader writing, lighting, and effects animation.

Film:	**Lord of the Rings: The Return of the King (2003)**
Producer:	**New Line Cinema**
Role:	Senior Technical Director
Participation:	I developed custom shader technology for creating precise and accurate shadows for Gollum's hair. I developed environment shaders for mountains and terrain that were designed to be seen at large distances as well as extremely close. I also headed the R&D effort on the development of the lava effects including managing external developers, pipeline development, and Renderman shader writing. I contributed to the R&D and final execution of the ground cracking shots for the Black Gates sequence. I also completed key shots, including Gollum's death and the ring's final destruction.

Film:	**Lord of the Rings: The Two Towers (2002)**
Producer:	**New Line Cinema**
Role:	Senior Technical Director
Participation:	My work included the development of Renderman shaders for many of the Ents (tree characters). I also completed many Effects shots for the Isengard battle and flooding sequences. This work included enhancing the existing miniature water with cg water and particles as well as generating cg smoke and fire elements.

Film:	**Voyage Inside the Cell (2000)** **The DNA Story (1997)**
Producer:	**Digital Studio SA**
Role:	Computer Graphics Supervisor
Participation:	I managed the 3D department in the production of these stereographic films. Since we were working on several films at once I modelled and animated much of the film myself. I did a lot of custom programming in order to produce the complicated and precise animation needed.

Awards

Award:	**Maya Master 2005**
Awarder:	**Alias**
Description:	The Maya Masters program recognizes talented members of the computer graphics community whose spirit and imagination reshape and redefine the boundaries of technology, art and visualization. No more than six Maya artists are chosen from the dozens of nominations received each year for this coveted award.
	www.mayamasters.com

Award:	**Technical Achievement Award 2001 - First Place**
Awarder:	**ILDA (International Laser Display Association)**
Software:	*Lasershow Converter Max*
Participation:	Developed the software infrastructure and the core laser rendering technology

Award:	**Editor's Choice Award 2000** – **Internet Eye Magazine**
Software:	*Illustrate!*
Participation:	Personally designed and developed this rendering software

Award:	**Imagina 2000** – **1st Prize in Category "3D Stereoscopy"**
Film:	*Voyage Inside the Cell*
Participation:	3D artist and programmer

Award:	**3D Magazine's Annual Editor's Choice Awards** – **3D Magazine**
Software:	*Illustrate!*
Participation:	Personally designed and developed this rendering software (That year's winners included such companies as Alias|Wavefront, Discreet, Apple, and Adobe)

Credit:	**1999 American Superbowl**
Commercial:	Reebok
Participation:	Created all animation and 3D elements for this high-profile commercial (30 seconds of air time costed $1.6 million USD)

Credit:	**SIGGRAPH 1997 Electronic Theatre**
Film:	*The DNA Story*
Participation:	Computer Graphics Supervisor for this film that was shown, exceptionally, in its entirety

Award:	**LEAF, London Effects & Animation Festival – Best Animation Award**
Film:	*The DNA Story*
Participation:	Computer Graphics Supervisor for this film that was shown, exceptionally, in its entirety

Credit:	**SIGGRAPH 1997 Animation Festival**
Film:	*Voyage Inside the Cell*
Participation:	3D artist/animator

Award:	**Biarritz Film Festival** – **Best Scientific Film**
Film:	*Voyage Inside the Cell*
Participation:	3D artist/animator

Author	**COMPLETE MAYA PROGRAMMING (VOLUME I)** *AN EXTENSIVE GUIDE TO MEL AND THE C++ API* * Translated into Russian, Chinese, French, and Japanese Published by Morgan Kaufmann Publishers, San Francisco, CA. ISBN 1-55860-835-4 This is the first professional textbook on the subject of Maya programming. It covers the fundamentals of Maya programming including an in-depth look at the Dependency Graph, the heart of Maya. Both MEL and the C++ API are covered in great detail with complete explanations on how to write your own scripts and plugins. Many complete, real-world, examples are provided. **COMPLETE MAYA PROGRAMMING (VOLUME II)** *AN IN-DEPTH GUIDE TO 3D FUNDAMENTALS, GEOMETRY, AND MODELING* Published by Morgan Kaufmann Publishers, San Francisco, CA. ISBN 0-12-088482-8 This book builds on the first. It covers the areas of fundamental 3D concepts and techniques, geometry, and modeling. It covers all of Maya's geometry types (polygonal meshes, NURBS, Subdivision Surfaces, and so on) in great detail. The displaying, creating, and editing of each geometry type is explained with accompanying MEL and C++ API examples. Writing custom modeling tools is also covered.
Patents	**Facial Motion Capture/Expression Method** FILED: 9TH APRIL 1998 APPLICATION NO: GB 9807899.1 Personally developed a unique method for capturing an actor's face and translating them into facial expressions. The final result is a complete facial motion capture and animation system I developed called *Visage*.

Title:	**Awaken**
Genre:	Short computer-animated film
Synopsis:	A robotic soldier, whose purpose is to kill, learns that life is precious and has its newfound convictions put to the ultimate test.
Comments:	**Script development funded by the Australian Film Commission (AFC)**
	Worked closely with script editors and mentors, **Anthony Lucas** (Academy-award nominee for his film "The Mysterious Geographical Explorations of Jasper Morello") and **Stuart Page** (script editor on the "Blue Heelers" TV series).

Professional Experience

Senior Technical Director

SEPTEMBER 2002 – PRESENT   **WETA DIGITAL**   WELLINGTON, NEW ZEALAND

My many diverse roles at Weta Digital include research and development, shader writing, lighting, and effects animation. I worked on the films, *The Lord of the Rings: The Two Towers, The Lord of the Rings: The Return of the King,* and *King Kong.*

Senior Graphics Researcher

AUGUST 2001 – AUGUST 2002   **EXLUNA INC./NVIDIA INC.**   BERKELEY, USA

Exluna is a company focused on developing the most advanced *look development* tools for technical directors and general artists alike. My role was to research and integrate advanced rendering techniques into the core Entropy renderer. Since this renderer is used by some of the world's best production studos, my work also involved a close collaboration with production crews. With my extensive knowledge of 3dsmax and Maya development, my contributions also included the design and implementation of a streamlined and intutive pipe between these animation packages and Entropy. My role also included the detailed design of the underlying architecture on which many of the company's future products will be based.

Senior Software Engineer

MARCH – AUGUST 2001   **WALT DISNEY FEATURE ANIMATION**   BURBANK, USA

While at Walt Disney Feature Animation I worked in the Technology Group; more specifically the Modeling and Dynamics Department. While I can't discuss the precise details due to strict confidentially agreements, I can note that I played an integral role in the design and implementation of their next generation of muscle and skin system. A system that was first conceived and extensively used in the *Dinosaur* movie. Through a series of company-wide lectures I was able to raise the general awareness of Disney developers as to the importance of correct Maya plugin design and implementation. My responsibilities also included creating any necessary tools and applications needed by the animators, modelers, and technical directors, on their current productions.

Visual Effects Animator

March – October 2000   Oniria Pictures   Luxembourg, LUXEMBOURG

My principle duty is to design, animate, and composite the majority of the visual effects for the feature animated film *Tristan and Isolde*. The scenes often require complex 3D and 2D effects such as oceanic waves, rain, and fire. My direct programming contributions include the development of the "toon" renderer software as well as the development of custom in-house software solutions.

Technical Director

July – Dec 1999   Spontaneous Combustion   New York City, USA

Directed the production of computer graphics elements for high profile television commercials. Personally developed several custom programs for particular production needs.

Computer Graphics Supervisor

Nov 1997 – May 1998   Pepper's Ghost Productions   London, ENGLAND

My main role was the research and development of techniques and procedures for the timely and efficient production of a 3D animated television series.

Computer Graphics Supervisor

Jun 1996 - Jan 1997   Digital Studio   Paris, FRANCE

I managed the 3D department in the production of stereographic films including the award winning scientific film *The DNA Story*. Having completed the storyboard with the client I would organize the team (5 animators, 2 programmers including myself) to produce the required film. Since we were working on several films at once I modelled and animated much of the film myself. I did a lot of custom programming in order to produce the complicated and precise animation needed.

3D Artist/Animator

Jan 1995 - May 1996   Digital Studio SA   Paris, FRANCE

Modelling and animating of complex organic structures inside a human cell using Autodesk 3D Studio R4 for the award winning film *Voyage Inside The Cell*. The animation was designed for viewing in stereoscopy. The modelling included the creation of technically accurate (an accomplished cytologist surveyed our work to ensure its accuracy) internal structures and their intricate movement.

Computer Graphics Programmer

Jun 1995 - Present   DavidGould.com   Gold Coast, AUSTRALIA

- Registered Alias-Wavefront Conductor™ Developer
- Registered Discreet Sparks™ Developer
- Registered Autodesk ADN™ Developer

Having established my own software development company, I have created numerous software solutions both for companies internally and on a freelance basis. For a complete and detailed list of software I have developed refer to the document DavidGould_SoftwareDevelopmentReferences.doc

Chief Programmer

1992 - 1995   ADDISON-WESLEY PUBLISHING   ROBINA, AUSTRALIA

Design and implementation of a computer assisted learning program to teach university students economics. Additional programs were also created to aid lecturers in developing tutorials. Programming of multimedia tools using Multimedia Toolbook OpenScript language for the creation of pedagogique tutorial software.

Commerical Products

Illustrate!™

CEL AND TECHNICAL ILLUSTRATION RENDERER (DISTRIBUTOR: DIGIMATION)

Personally developed this renderer that takes a 3D scene and renders it in 2D as if were hand drawn. Currently the market leader in its class.

Illustrate! is used by some of the world's leading companies including Walt Disney Imagineering, Sony Pictures Entertainment, Aardman Animation Studios, IBM, Microsoft, NASA, MGM, Lockheed Martin, Westwood Studios, British Aerospace, Ex Machina, and many others. Some of the leading universities and institutions are teaching Illustrate! including Sheridan Center for Animation and Emerging Technologies (Sheridan College), California State University, Pratt Institute (New York), University of Montana, Brown University and many others.

It has also been showcased in the following publications:

Books

Advanced Flash 5, ActionScript in Action by Dan Livingston, published by Prentice Hall.
Flash Site Workshop by Ken Milburn, published by SAMS.
3DS MAX 4 Magic by Sean Bonney, published by New Riders Publishing.
Flash 5 Studio by William Spencer, published by Friends of Ed.
3DS MAX: From Models to Movies by R. Shamms Mortier, published by Charles River Media.
Webmaster Dreamweaver, Flash & Fireworks by Erik Mansvelders, published by Sybex, The Netherlands.
Flash 4 Bible by Robert Reinhardt, Jon Warren Lentz, published by IDG Books Worldwide.
Web3D Animation by Born Digital, Inc. Japan.

Magazines

COMPUTER ARTS SPECIAL FEB 2001
3D MAGAZINE JAN 2000
DIGITAL PRODUCTION MAGAZINE Sep 1999
KINETIX WORLD MAGAZINE Feb 1999
COMPUTER GRAPHICS WORLD MAGAZINE Dec' 1997 "Different Strokes"

Entropy Renderer

FILM-QUALITY PHOTOREALISTIC RENDERER (EXLUNA, INC)

I contributed to design and development of the Entropy renderer; a hybrid scanline-raytracer. Entropy is capable of handling complex geometry, with sub-pixel displacements, and user programmable shaders. It is also capable of advanced raytracing, global illumination, caustics, area lights, etc. This renderer is used at numerous studios, including Industrial Light and Magic, Sony Pictures Imageworks, Disney Feature Animation, Mikros Images, Frantic Films, etc.

Entropy for 3dsmax

3DSMAX TO RENDERMAN TRANSLATOR (EXLUNA, INC)

This product is designed to take a 3dsmax scene and convert it to RIB for rendering in the Entropy renderer. It converts all the geometry, lights, cameras into the required RIB statements. It also generates Shading Language (SL) shaders from the 3dsmax materials. This product is targeted to non-technical artists. As such, it handles all

rendering preprocessing (RIB generation, SL creation and compiling) and renderer execution transparently. The user initiates the render by clicking on the Render button and a final rendered image is returned without any additional user intervention.

Monkey™ 2.0

ANIMATION CONTROLLER DRIVEN BY MONKEY DEVICE (DIGITAL IMAGE DESIGN INC.)

Personally developed this updated plugin that allows you to move the appendages of a Monkey device (articulated electronic model) and have the animation imported into and manipulated in 3DS MAX.

LaserShow Convertor™

3D TO 2D LASER GRAPHICS SYSTEM (PANGOLIN LASER SYSTEMS INC.)

Personally developed this product that generates animated 2D vector laser paths from a scene consisting of 3D objects. Clients typically use this system for the creation of animated shows or presentations that project laser images onto walls of water, smoke, etc producing unique and spectacular laser effects.

Refer to the document DavidGould_SoftwareDevelopmentReferences.doc for further development references.

Teaching

Introduction to Maya Programming - Disney Feature Animation

Presented multiple classes that explained how to program Maya, including an introduction to MEL and the C++ API. More advanced topics were also covered. The classes were taught to the entire Feature Animation crew and not just the programming staff.

Maya Master Class "3D Visualization of Maya Shaders" - SIGGRAPH 2003

Presented a class on a toolkit (Maya plugins) I developed for the 3D visualization of Maya shaders. This toolkit allows shader writers to visualize the internal state (variables, data, etc) of a shader during its execution. The 3D data can be drawn interactively in Maya as points, arrows, graphs, etc. using OpenGL. By presenting the data in a visual form the shader writer can easily gain a greater and more intuitive understanding of the shader. This toolkit is a great improvement on the often antiquited shading testing and debugging methods of using printfs, outputting to color channels, etc.

Masters in Advanced Graphics

1993   ROYAL MELBOURNE INSTITUTE OF TECHNOLOGY   MELBOURNE, AUSTRALIA

Note: I only completed the selective Advanced Graphics subjects not the entire Masters

Selective Subjects:
- Foundations of Computer Graphics
- Image Synthesis
- Geometric Modelling
- Computer Animation

* 100% mark on all programming assignments using Open GL on SGI machines

Degree in Computing Science

1990-1992   BOND UNIVERSITY   GOLD COAST, AUSTRALIA

Major in **Software Engineering** and Minor in **Artifical Intelligence**

Highest Distinction 85% - 100%
- Advanced Graphics
- Human Computer Interfaces
- Artificial Neural Networks
- Project Applications (Created 3D Rendering C++ Programming Library)
- Programming Languages
- Operating Systems
- Database Management Systems
- Computing and Data Skills

Distinction 75% - 84%
- Introduction to Artificial Intelligence
- Applications of Artificial Intelligence
- Database Design and Use
- Computer and Systems Architecture

* Award for Best Graduate Artificial Intelligence Project

Additional Studies

Certificate Course in Stop Motion Animation

1999   SCHOOL OF VISUAL ARTS   NEW YORK, USA

Completed certificate course in stop motion animation. The curriculum included clay and articulated model making followed by the implementation of a short film using the animation techniques learned. The final animation was captured using the Video Lunch Box device.

Volunteer Work

Paper Reviewer – ACM SIGGRAPH 2002 Conference Proceedings

Completed formal evaluation and review of research and technical papers submitted for potential inclusion into the SIGGRAPH 2002 Conference Proceedings. My task included determining the integrity and validity of the research, techniques, and methodologies proposed. This culminated in the preparation of a final report, detailing my findings.

Moderator – Highend3D Rendering Theory Forum

Since its inception, this forum has become the most professional source for rendering theory discussion. A large number of the world's best minds in rendering research frequent and contribute to this forum. As a moderator, I'm actively involved in instigating discussion and debate, as well as providing answers to questions.

Moderator – Highend3D Non-Photorealistic Rendering Forum

This forum focuses on the particular needs of creating images that have a more artistic aspect. Computers can be used to simulate a wide variety of traditional media, and this forum discusses various products and techniques that achieve this. As the sole moderator of this forum, I present ideas and techniques as well as provide answers to users' questions.

Memberships

Member of the **Visual Effects Society (VES)**
Member of the **Australian Writer's Guild (AWG)**
Member of the **Australian Cinematogapher's Society (ACS)**

Languages

Fluent English and French, both written and oral. Basic Spanish.

Nationalities

Australian and British (dual nationality). I can therefore work and live in any European Community country without needing a work visa.

Personal Interests

Photography, stop-motion animation, surfing, tennis, and snowboarding.