DANIEL GALBRAITH
TECHNICAL ARTIST
PROGRAMMER

CONTACT

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ABOUT

Dan is a technical artist and programmer who likes wearing as many different hats as possible.

He's very tall, and really loves cats. Most recently, Dan was Lead Technical Artist at SMG studio. He worked at Mountains and Spunge Games on several commercial releases, has built a number of Serious Games for Queensland universities, and occasionally tutors in a Games Design course. Previously, Dan worked on a co-op party game about very poor parenting called Think of the Children.

KEY PROFICIENCIES

Unity3D (C#)

HLSL & GLSL

Shader Graph & Amplify

Blender

Autodesk Maya

Photoshop

JIRA & Confluence

Substance Suite (Painter, Designer)

Firebase

CURRICULUM VITAE

PROFESSIONAL EXPERIENCE - MAJOR ROLES

2021-2023 **SMG Studio - Sydney**
Lead Technical Artist

2019-2021 **Mountains Studio - Melbourne**
Technical Artist

2017-2019 **Spunge Games - Brisbane**
Designer / Gameplay Programmer

2017-2017 **Jammed Up Studios (Think of the Children) - Brisbane**
Gameplay Programmer, Technical Artist

2016-2020 **University of Queensland Engineering Faculty - Brisbane**
Interactive Experience Designer, Programmer

PROFESSIONAL EXPERIENCE - MINOR ROLES

2020-2020 **Minerals Council of Australia - Canberra**
Game Design Consultant

2017-2019 **Queensland College of Art - Brisbane**
Tutor: Bachelor of Games Design
(Serious Games, Experimental Games)

KEY SKILLSETS

Management and Production
» High-level production planning and scheduling for scalable Tech Art pipeline infrastructure
» Day-to-day tasking and prioritisation for members of a multidisciplinary team
» Identification of potential performance and asset implementation bottlenecks, best practice recommendations for achieving graphical goals on target hardware
» Supporting the professional development of team members

Rendering
» Building performant PBR and non-PBR lighting solutions (voxel lightmapping, custom shadowcasters etc)
» Offline calculation of complex rendering effects for low-spec hardware (precalculated reflections, ambient occlusion, translucency, etc)
» Writing HLSL and GLSL shaders, both by hand and using node-based editors (including creation of modular rendering libraries)
» Writing VFX engines, manual mesh generation, and tooling for en-masse mesh drawing (voxel-based VFX systems, marching cubes, direct mesh drawing, etc)

Tech Art
» Design and implementation of multi-stage asset ingestion pipelines for use at scale.
» Building production tools, macros, and asset preprocessors to reduce bottlenecks in asset pipelines
» Building production tools for baked lighting infrastructure
» Implementation of IK and procedural animation systems
» Optimisation of PhysX implementations on mobile hardware

Gameplay and Systems
» Implement algorithms for proc-gen content (graph traversal, terrain generation, fluid sims, WFC)
» Build robust cross-project systems designed for ease of use (localisation, UI flow, FTUX)
» 'Juice' and polish implementation (VFX, character controllers, animation, UI)

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PROFESSIONAL ACHIEVEMENTS

Serious Games
Co-authored grant for the Minerals Council of Australia to commission a series of educational games about geoscience for

Australian high-school students. The grant was successfully awarded to Tasmanian game studio 'Secret Lab', and as of 2023, the 'CoRE Foundation' pilot program is running in 58 schools Australia-wide.

Co-authored paper presented at Joint Conference on Serious Games 2017 in Valencia.

Media Recognition
'CoRE Foundation' pilot program presented at the 26th World Mining Congress, 2023.

Think of the Children received attention from a number of notable games media entities, including Rooster Teeth's LetsPlay, NorthernLion, TeamFourStar, and Larry 'Major Nelson' Hryb of Xbox Live.

EDUCATION

2013-2015 Bachelor of Games Design, Griffifth University (QCA)
With First Class Honours

NOTABLE PROJECTS

2021: Unnanounced Project (SMG Studio)
Role: Lead Technical Artist
Overview: Unannounced game project with a third-party IP, that is the studio's largest project to date.
Primary Tasks:
» Cofounded project's Tech Art team, oversaw expansion from 3 to 15 fulltime members. Responsible for writing job postings, reviewing hiring decisions, and supporting professional development of team members.
» Responsible for high-level production planning and scheduling for project-wide Tech Art infrastructure development, along with day-to-day tasking and prioritisation in conjuction with the production team
» Responsible for identifying performance optimisation and asset implementation bottlenecks project-wide, and making best practice recommendations for other teams on how specific goals could be achieved on target hardware
» Worked closely with Art Director and Senior Executive teams to define game's visual identity and rendering treatment (including design of shader libraries and lighting pipelines)
» Lead development for project's purpose-built asset authoring pipline, currently in use by dedicated team to ingest IP-specific metadata and programatically convert it into gameplay-ready geometry
» Designed and built bespoke, voxel-based VFX engine for simulating complex volumetric effects in real time, along with suite of artist-friendly authoring tools

2020: Unannounced Project (Mountains Studio)
Role: Tech Artist, Rendering Engineer
Overview: A cosy, wholesome game about decorating your first apartment for iOS
Primary Tasks:
» Shader treatment, voxel-based lighting solution for user-placed realtime lights on mobile
» Human AI behaviour system, where character could interact with arbitrary number of user-created items
» UI State Manager, custom Localisation framework for TextMeshPro, global FTUX framework

2020: Unannounced Project (Mountains Studios)
Role: Proc-gen Algorithm Developer
Overview: Unannounced project relying heavily on procedural generation to create believable towns and cityscapes from user-placed landmarks.

Primary Tasks:
» Generation of believable road networks between user-placed landmarks on an arbitrary terrain heightmap
» Generation of towns and built-up areas surrounding landmarks and road networks

2019: Faily Rocketman (Spunge Games)
Role: Lead Developer
Overview: A physics-based vertical launcher game for iOS and Android
Primary Tasks:
» High-level design of codebase and asset pipeline, liaison with external contractors
» Data-driven design iteration using Firebase and Google Analytics, A/B cohort testing to refine meta and gameplay variants on a fortnightly basis
» UI and UX design, adapting the franchise's distinctive look to contemporary design patterns

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NOTABLE PROJECTS (CONT.)

2017: Think of the Children (Jammed Up Studios)
Role: Gameplay Programmer, Technical Artist
Overview: A local multiplayer, cooperative party game about difficulties of parenting, released on PC, MacOS, PS4, Xbox One, and Nintendo Switch.
Primary Tasks:
» Gameplay Programming (Character controller, game state, AI for Hazards and child NPCs)
» Tools and systems design, establishing asset pipeline for level and content implementation
» Shader work, VFX, and in-engine animation
» Development of cutscene and dialogue tech for story-based Campaign Mode
» Narrative design and scriptwriting for game's Campaign Mode

REFEREES

Lee Richards (Director of Production at SMG Studio)
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Arne Westedt (Senior Technical Artist at SMG Studio)
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Lo Maslen (Former Managing Director at Mountains Studio)
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Cherie Davidson (Former Lead Programmer at Mountains Studio)
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Shane Rypers (Solutions Architect at CSIRO, formerly Spunge Games)
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