

Tom Carroll

Software Engineering | 3D Generalist

Details

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Tom.RaincloudGames.com

Ferndale, Michigan

Education

B.S.

Game Design and Development

Brown College

Mendota Heights, MN

June 2008-May 2011

Skills

SENSOR MODEL/SIM – 7 YEARS

Ansys AVxcelerate:

Asset Preparation, Sensor Labs,

Sensor Simulator, APIs

SCENE GENERATION – 8 YEARS

Ansys AVxcelerate Asset Prep,

MathWorks RoadRunner,

ASAM OpenDrive, HERE HD Maps,

OpenStreetMap OSM

SCENARIO DESIGN – 4 YEARS

MathWorks RoadRunner,

ASAM OpenScenario, AVL Scenius

SCRIPTING -18 YEARS

Blueprints (UE4/UE5) 14 years

JavaScript 13 years

Python 5 years

WEB DEV - 13 YEARS

HTML, jQuery, PHP, CSS, XML, JSON

REPOSITORY - 14 YEARS

Git, Mercurial

AGILE – 15 YEARS

Azure DevOps, Atlassian JIRA

GAME DESIGN/DEV – 21 YEARS

Unreal Engine (4, 5) 17 years

Unity 3D 4 years

3D MODELING – 21 YEARS

3D Studio Max 17 years

Blender 4 years

2D TOOLS – 21 YEARS

Adobe Photoshop 21 years

Substance Designer 8 years

Adobe Illustrator 3 years

Adobe Bridge 3 years

MICROSOFT OFFICE – 21 YEARS

Profile

Leader experienced in Sensor Simulation Engineering integrates multiple in-development software and organizes international teams toward a unified, client-focused vision.

Passionate 3D Generalist and expert in scene generation from map data, 3D asset creation and parametric material definition. Impactful, time-tested Scrum Master and AGILE expert trusted with planning for global organizations with a demonstrated history of effective application in the computer software and simulation industries.

Artist at heart and driven to create novel technical solutions to 3D art asset development pipeline challenges for simulation and games. They possess strong entrepreneurship skills, as an independent game development company founder with a released game title.

Experience

Lead Application Engineer | Applications Engineering, Sr Staff Engineer

Ansys | Ansys part of SYNOPSYS (Title change with company acquisition)

March 2024-May 2026 / Novi, MI / Remote

- Led AGILE project planning for three global teams of engineers, researchers, and artists in regional customer projects in continuous release development following Scrum methodologies and utilizing Azure DevOps to support creating innovative solutions to integrate software for autonomous vehicle sensor modeling and simulation.
- Supported customers in training, adopting AVxcelerate for sensor simulation in their tool chain, sensor development pipeline, and custom application for specific workflows.
- Tested and provided actionable feedback on emerging product technology developments while leading research into scene generation and sensor simulation with Gaussian Splats, NuRec, and Nvidia Omniverse integration for developing next generation technologies.
- 3D generalist and scene generation expert for global customers. Built utilities for streamlining workflows and automating the generation and parametric variation of sensor-accurate virtual worlds based on real-world data and optical material properties for use in real-time or faster camera, RADAR, and LiDAR simulations for testing and validating driving scenarios and sensor configurations at scale.

Senior Consulting Engineer

Ansys

April 2019-March 2024 / Troy, MI / Remote

- Introduced, developed, onboarded, and led AGILE planning for three global teams of engineers, researchers, and artists with customers in continuous release development of innovative solutions integrating software for autonomous vehicle sensor modeling and simulation for customers following Scrum methodologies using Azure DevOps.
- Developed multi-level AGILE planning to onboard and support a global team of over one hundred engineers to consolidate documentation and best practices for electrification.
- 3D generalist and scene generation expert for global customers. Built utilities for streamlining workflows and automating the generation and parametric variation of sensor-accurate virtual worlds based on real-world data and optical material properties for use in real-time or faster camera, RADAR, and LiDAR simulations for testing and validating driving scenarios and sensor configurations at scale.
- Highlight achievement: Created a 7-mile-long scene consisting of sensor accurate, photorealistic highway and surrounding environment from real world mapping data.

3D Graphic Designer

Ansys

August 2018-April 2019 / Troy, MI

- Designed hundreds of precise, photorealistic 3D meshes and textures for ADAS simulation.
- Integrated installations and synchronized multiple cooperating in-development software, created and maintained installers improving deliveries and reduced regression frequency.
- Introduced AGILE project planning and motivated organization, and documentation.

Achievements

Highest Award for Achievement

The Dale Carnegie Course
July 2022 / Remote

CEO Solutions Innovation Award: ANSYS-Aptiv Autonomous Driving Simulation Solution

ANSYS
October 2019 / Troy, MI

Presentation: Native apps vs web apps vs mobile websites.

3M Headquarters
October 2016 / Maplewood, MN

Presentation: Natural user interface concepts and Apple's Human Interface Guidelines

University of Minnesota /
Electronic Design Theory Course
April 2012 / Minneapolis, MN

Release of indie game: Falleritus

Window, 2018
IOS, March 2012

Showcased / Presented Falleritus

MineCon
November 2011 / Las Vegas, NV

Fine Art Fabricator, Carpenter, Photographer, Editor, Assistant

Lindsay Splichal, Artist
June 2018-Present / Metro Detroit, MI

- Works with a fine artist, providing detailed 3D concept design and plans for development. Carpentry, fabrication and construction of high precision, large scale fine art sculptures.
- Timely, and accurate installation of work in galleries and shows. Lighting, photography, documentation, and final image retouching and export for web, submission, and print.
- Organizing work pricing data sheets and portfolio documentation for submissions.

Contractor Developer

Allen Interactions
November 2017-September 2018 / Mendota Heights, MN / Remote

- Created highly interactive e-learning web apps, with branching interactions. Implemented strict government 508-compliance of accessibility for sight/hearing-impaired users.
- Optimized process by designing a structure for rapid prototyping with stability for expansion. Enabling achievement of aggressive deadlines to satisfy client expectations.

Developer

Allen Interactions
November 2014-November 2017 / Mendota Heights, MN

- Produced powerful e-learning web apps working in fast-paced timelines, incorporating solutions from instructional designers, media professionals, and content writers.
- Invented creative, fun solutions to complex instructional design oversights early in projects and promoted strong learning objectives by channeling passions for game design.
- Designed data frameworks, reusable code libraries, repositories, externalization for translation, JIRA and LMS integration, packaging for SCORM and AICC environments.
- Drove small team dynamics during development, communicating media, text, and client needs, prioritized build lists, driving the project to success. Enhanced process (reduced team stress) by implementing and managing a system organizing, load-balancing work.

Founder, Game Developer, Freelance Artist

Raincloud Games
November 2011-Present / Detroit, MI

- Building games in Unreal Engine 5, 4, and Unity3D game engines for desktop and mobile using JavaScript and Blueprint scripting.
- Crafting high fidelity, game-ready 3D models for character, environment, and gameplay with UVW unwrapping, texturing, skinning vertices to armatures, and animation.
- Solved level design tooling by dynamically generating 3D terrain with a novel 2D editor. Established a system for collecting level metadata to a user interface.
- Enabled level portability between worlds by building a theme definition structure which enriches a single level design with any world's attributes.
- Invented a system for audio spatialization by sound classification which provides enveloping audio dynamics for players entering caves, underwater, or on the surface.
- Designed graphics, logos, and interfaces: HUD, instruction, level list, and layered menus.

Associate Programmer

Allen Interactions
June 2011-November 2014 / Mendota Heights, MN

- Self-taught ActionScript 3, Adobe Flash and developed interactive e-learning courses.
- Managed software QA/validation using JIRA in a continuous release cycle prioritizing and resolving tickets, communicating with clients, and validating issues before release. Created automated tests in Java with Selenium. Designed reusable templates, apps.

Freelance Game Designer

Gallow Games
February 2011-January 2012 / MN / Remote

- Educated on the Unity3D game engine while executing on iOS game development goals.