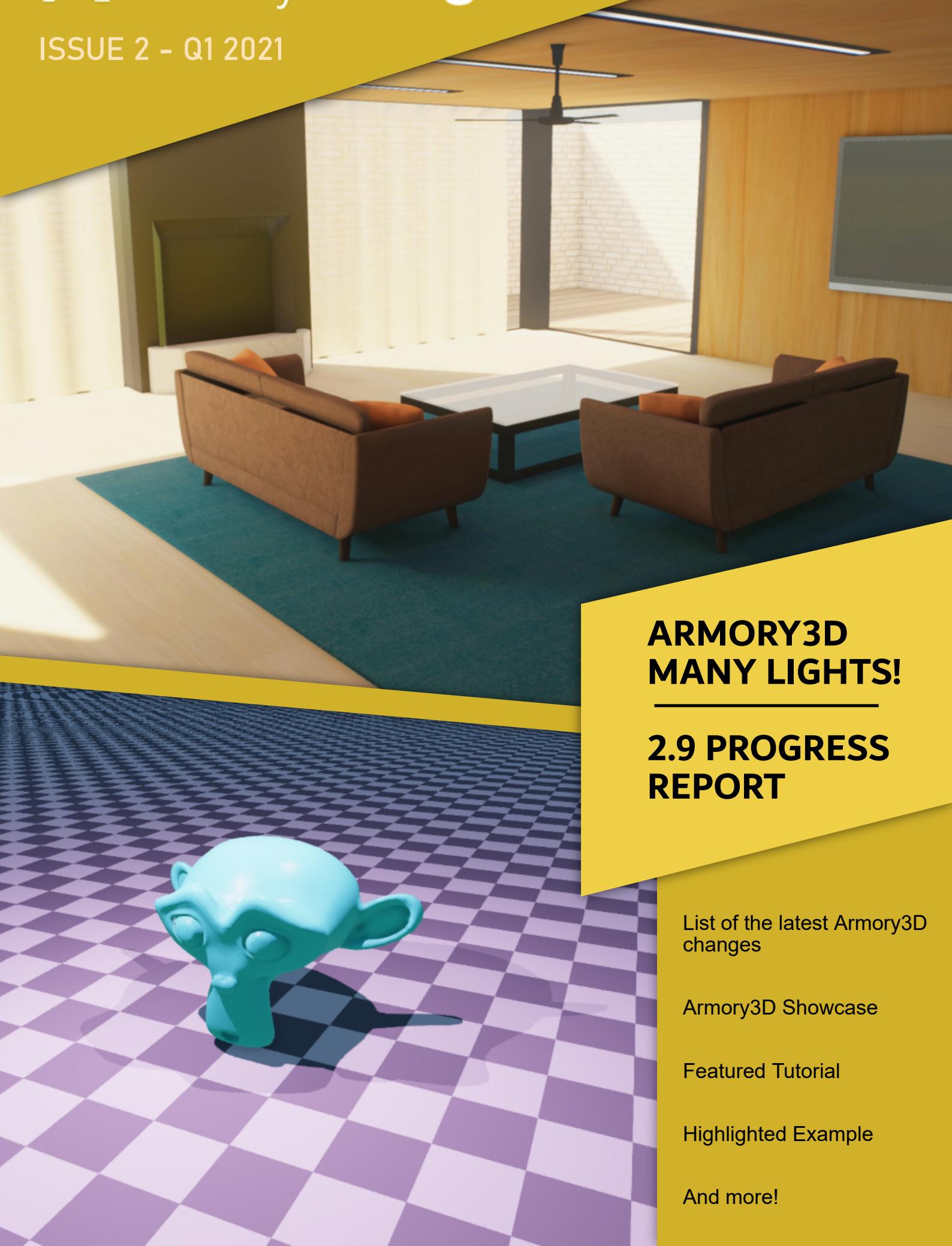


# A armory

# Digest

ISSUE 2 - Q1 2021



## ARMORY3D MANY LIGHTS!

## 2.9 PROGRESS REPORT

List of the latest Armory3D changes

Armory3D Showcase

Featured Tutorial

Highlighted Example

And more!

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# News

## New year, new possibilities!

It's a new year (since last issue of the Digest), and corona still sucks, so stay inside and make some games! You'll get bonus points if it's made with Armory! This issue of the Armory Digest is a few days late due to me being busy and I wanted to have time to properly write some stuff, but here it is!

## New Armory version out now!

A new version of Armory was released for this month, and comes with a great bunch of changes, including fixes for both physics and lights - Now you're able to play around with plenty of lights!

Get the latest version here:

[Download Now](#)

## Blacksmith release postponed

In the last issue of the Digest I wrote that there was a slight chance that Blacksmith might be able to get an alpha release during the end of Q1. Well, Q2 is here and unfortunately I've neither had time to develop more on it, or make assets supposed to fill it. So it will probably be a bit before I'm ready to release it as an alpha version - For now I think I'll say it'll be released when done.

## Armorpaint

Lubos has been working hard on Armorpaint as usual and some impressive features have gradually found their way into the open-source painting application. Amongst some of the really nice features are non-destructive decal layers as well as procedural edge wear materials!

You can find the source code here: [LINK](#)

Or you can alternatively buy prepackaged builds here and support Armory3D:

[Buy Now](#)



Working on procedural edge wear materials for ArmorPaint.



3:57 pm · 6 Feb 2021 · Twitter for Android



Non-destructive decal layers now available in ArmorPaint.



0:54 | 5.4K views

8 50 403

# Highlighted changes

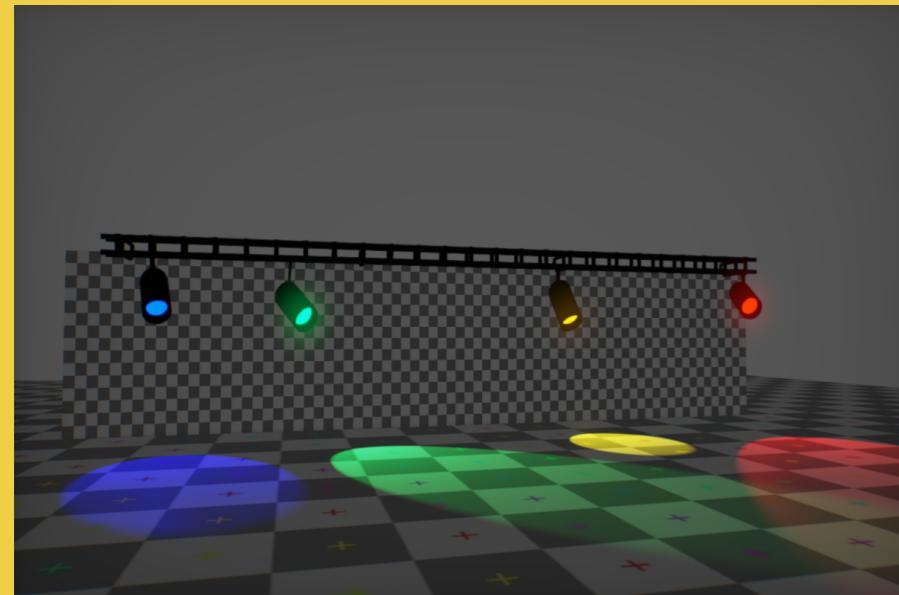
Since September

## Highlighted changes:

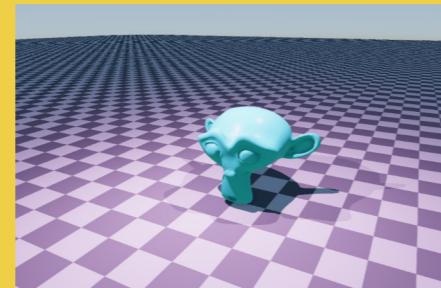
The selection of highlighted changes does necessarily not reflect commits of higher importance or size, but is mainly selected for visual value.

### Massive improvements to lights

There's been massive improvements to the lights in Armory. One of the most often reported issues in Armory3D has been the lack of support for many lights in a scene. N8n5h has done massive work on the shadow map atlasing, which allows for many lights with shadows in a scene!



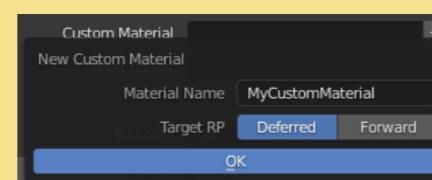
The current shadowmap atlas solution allows you to have up to 64 lights visible in the scene with 64 light shadows. Additional experimental atlas LOD settings are also available now for better performance.



Read more about it here: [Read more](#)

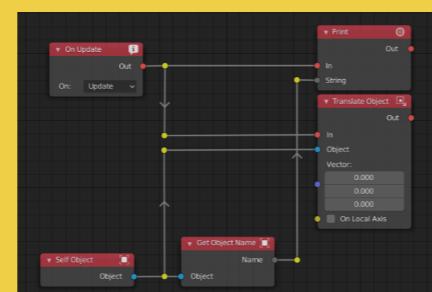
### Option to create a custom material

MoritzBrueckner added an option to automatically add a setup which includes all the folders and files you need to get started with a new custom material shader.



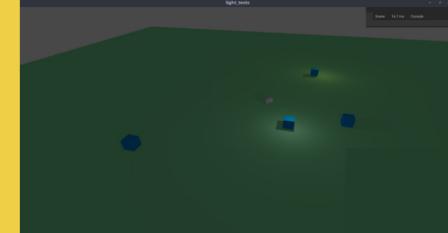
### Fixes to reroute nodes

There's been fixes to the node reroutes (the yellow connecting dots). In case you don't use them, they're good for organizing your nodes so they become less spaghettiified. You can add them by holding down shift + right mouse down and drag along a wire where you want the reroute to be.



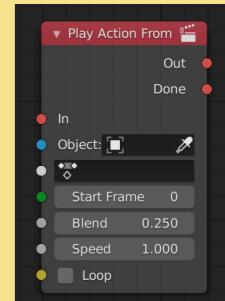
### Fixes for light clustering artifact

N8n5h worked on solving lighting artifacts where spot lights were detected wrongly for some light clusters.



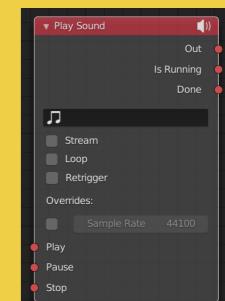
### Speed and loop options added to Play Action From node

QuantumCoderQC added some speed and loop options to the Play Action From node. This enables you to set a custom action play speed as well as toggle whether or not it should loop.



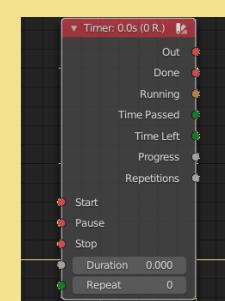
### Stream option added to Play Sound node

MoritzBrueckner added a stream option to the Play Sound node, so that it now supports streaming from disk rather than preload into memory.



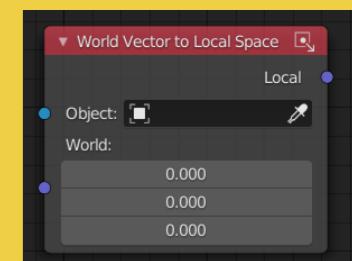
### Dynamic Node Labels

MoritzBrueckner added dynamic node labels to some nodes, which now highlights some values configured throughout the nodes.



### Added World Vector to Local Space node

Knowledgenude added the The World Vector to Local Space node, and as the name implies, it enables you to convert the World Vector to an object-centric local space vector, which also takes the object scale into consideration.



[The Blender 2.9+ progress report continues on the next page](#)

Highlighting even more added and upcoming features!

[The chronological commit/features are listed on the page after that](#)

Sorted after date of pull-request.



# 2.9x Progress Report

There's been done a lot of work getting Armory3D ready for Blender 2.9+. The reason behind this being both API changes and structural changes in the underlying architecture in Blender concerning scenes, collections and depsgraph.

## On the road to Blender 2.9+!

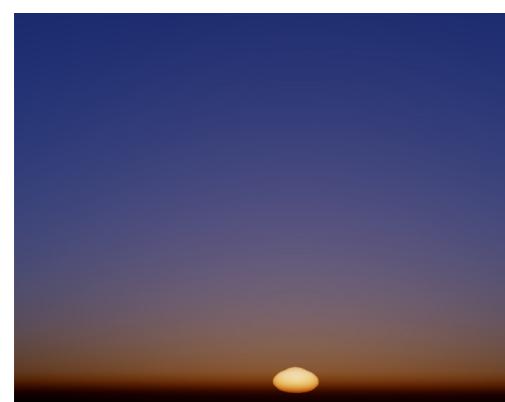
MoritzBrueckner and QuantumCodeQC have working on getting Armory3D ready for 2.9+. There's been a bit of API changes, which has caused some elements in Blender to not get exported to Armory.



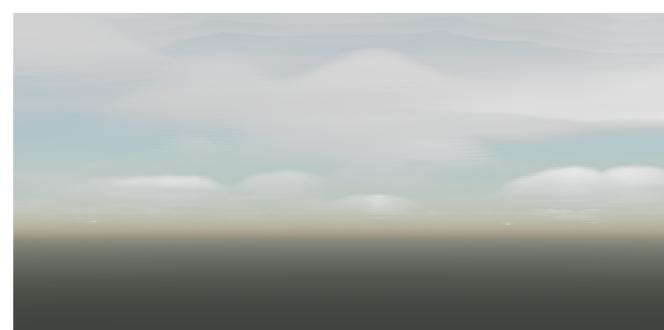
QuantumCoderQC is have been working on fixing and improving the physics, including constraint behaviour, fixing importer and world physics, adding a new physics constraint node and generally aligned physics more towards Blender 2.9. Additionally looking into some additional physics features, including compound collision shapes, which allows for building customized physics objects by combining child shapes into a parent compound shapes, potentially making things such as chains possible.

MoritzBrueckner have been working on adding support for a new sky, namely the Nishita sky model that was a new feature in Blender for 2.90. The initial support for the Nishita sky will support the dust, air and ozone settings from the Cycles implementation, along with some additional visual features to make it look better. At first, support for radiance (specular reflections) and irradiance (spherical harmonics IBL) will probably not be supported, but the work is ongoing.

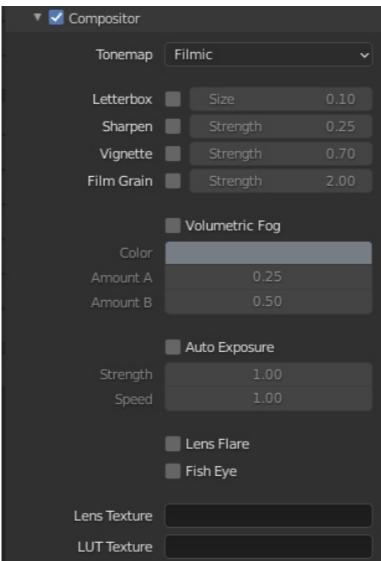
Additional work for 2.9 support includes fixes for operators, polling, search menu, node updates, and various UI updates and redesigns.



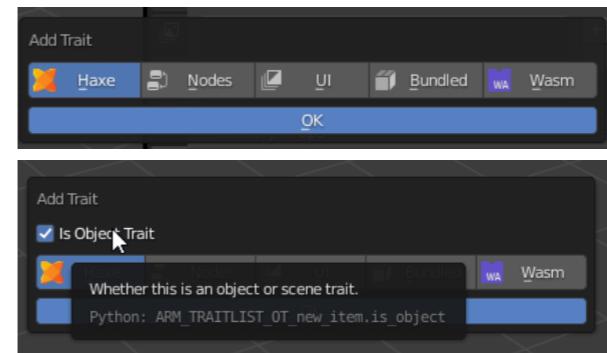
The new Nishita sky with Ozone settings



The Nishita Sky also supports the existing clouds

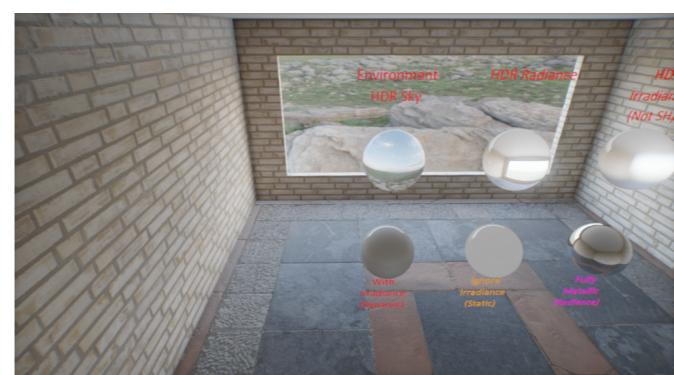


Redesign of the compositor panel, making it much cleaner

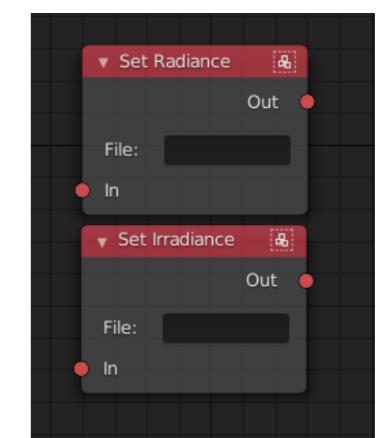


Improved Add Trait menu (that now also shows a checkbox Is Object when called from the operator search menu, and only then)

Naxela have been working on adding some more features to the lightmapper and fixing some of the 2.91+ API breaking changes. Additionally, work has been done on adding new lighting modes such as AO combined support, initial work on improved baked light probe workflow, new nodes for managing environments, radiance and irradiance as well as support for baking lightmaps to vertex colors.



New nodes now makes it easier to manage your radiance and irradiance environments



Added nodes for radiance and irradiance control

Currently, a soft deadline for the Armory 2.9 compatible release is set to sometime before the release of the next LTS (Long-term support) release of Blender, which is going to be 2.93. The next version of Blender is scheduled for release on the 27th of May, with Blendcon 2 starting on the 17th of March.

# Notable changes

## Since December

### Listed pull requests changes:

- Write debug parameter by default
- Update custom trait icons
- Option to ignore irradiance for material
- Fix for material blending not working
- Fix drawing of bool properties in the UI
- Add mask option to pick Rigid Body node and Physics World
- Console improvements
- Make sure compiled.inc is always first when parsing shaders for clusters
- Improved Finite State Machine
- Reuse contacts array instead of creating a new one
- Remove array allocation from SendEvent node
- Add button to create a new custom material
- Add support for shadow map atlasing
- Fix normals export of skinned materials
- Fix LOD operator polling and add some bl\_options
- [Blender 2.9] Updated attribute node
- Picklocation node returns null when input is invalid
- Normalize SDK path
- Updated inputmap and added finite state menu
- [Blender 2.9] - Various UI improvements and redesign
- Print rounded build time to console
- Fix for rerouting of nodes
- Updated input mapper
- [Blender 2.9] - Search menu fixes
- Fix editing bundled traits if the project was never compiled
- [Blender 2.9] - Fix exporter and conversions for Physics World
- [Blender 2.9] - Update operator options
- [Blender 2.9] - Principled BSDF: Update input socket indices
- Fix mouse wheel verification
- Added input mapper
- [Blender 2.9] - Object panel UI improvements
- Show warnings for invalid instancing configurations + cleanup
- Show warning when scene is missing a world and rp background is set to world
- Solve artifact with clustering of lights
- Add speed and looping options in Play Action From Node
- Improve physics constraint handling
- Fix inverted margin for Kinematic Character
- Improved node side panel and context menu
- Fix bone markers export
- Use relative paths only when path/reference are on the same drive
- Fix adding physics constraint at game start
- Added World Vector to Local Space node
- Updated math.gsl
- Add dynamic node labels
- Add stream option to Play Sound nodes
- Add SetShaderUniform node
- Fix for normals and wposition in custom particle node

- Improved physics constraints
- New constraints node - Physics constraint node
- New constraints node - Add physics constraint node
- Fixes and improvements for node replacement system
- Fix for volume triggers
- Added options for HTML5 settings
- Fix for on swipes

*Contributors - Huge thanks to:*

- Lubos, MoritzBrueckner, QuantumCoderQC, N8n5h, e1e5en-gd, knowledgenude, onelsonic, tong,

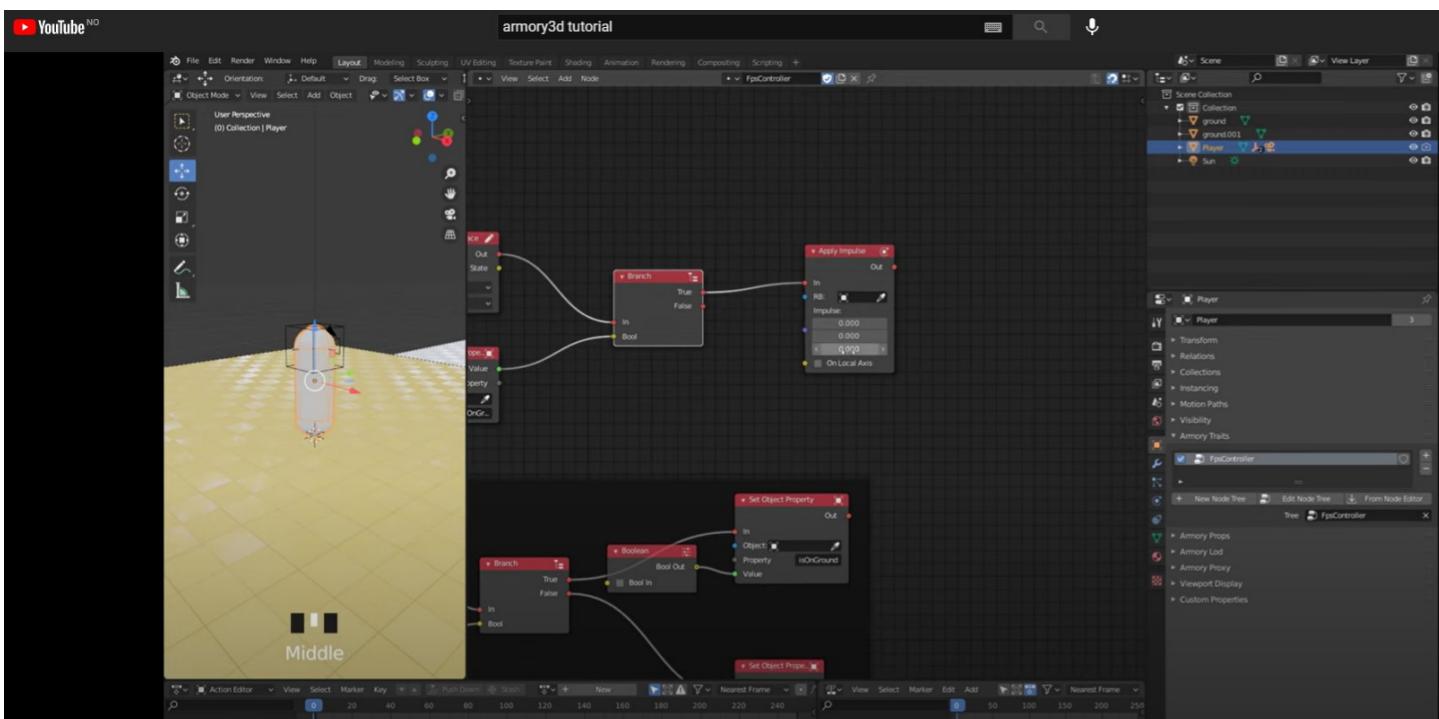
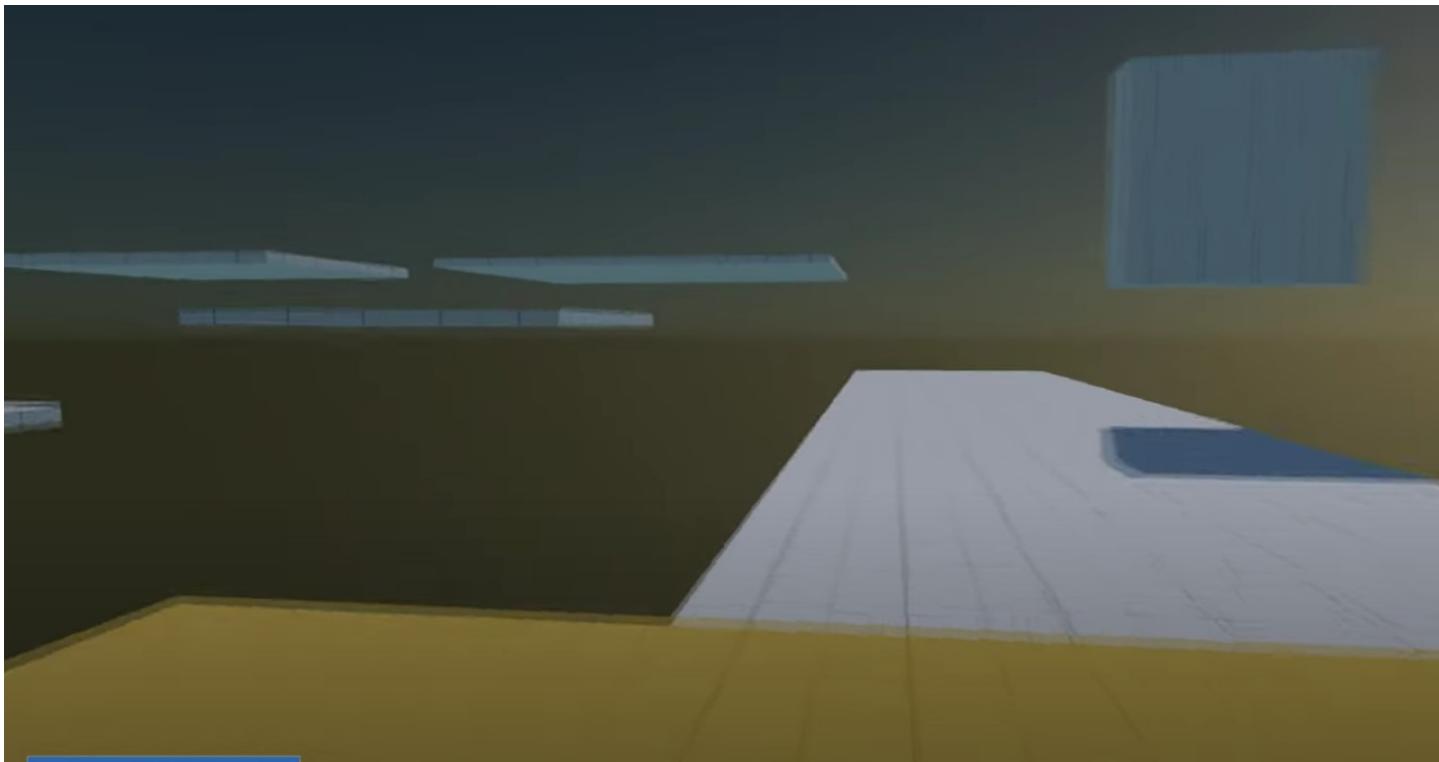
SunDaw

# Featured tutorial

## Armory3D - First Person Controller - Jumping

This tutorial by Armory Blender describes how to implement jumping to a first person character by using raycasting. It is part of the first person creation Series. The tutorial focuses mainly on the usage of nodes.

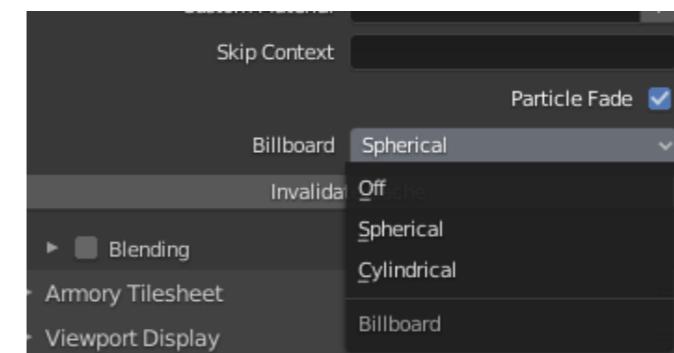
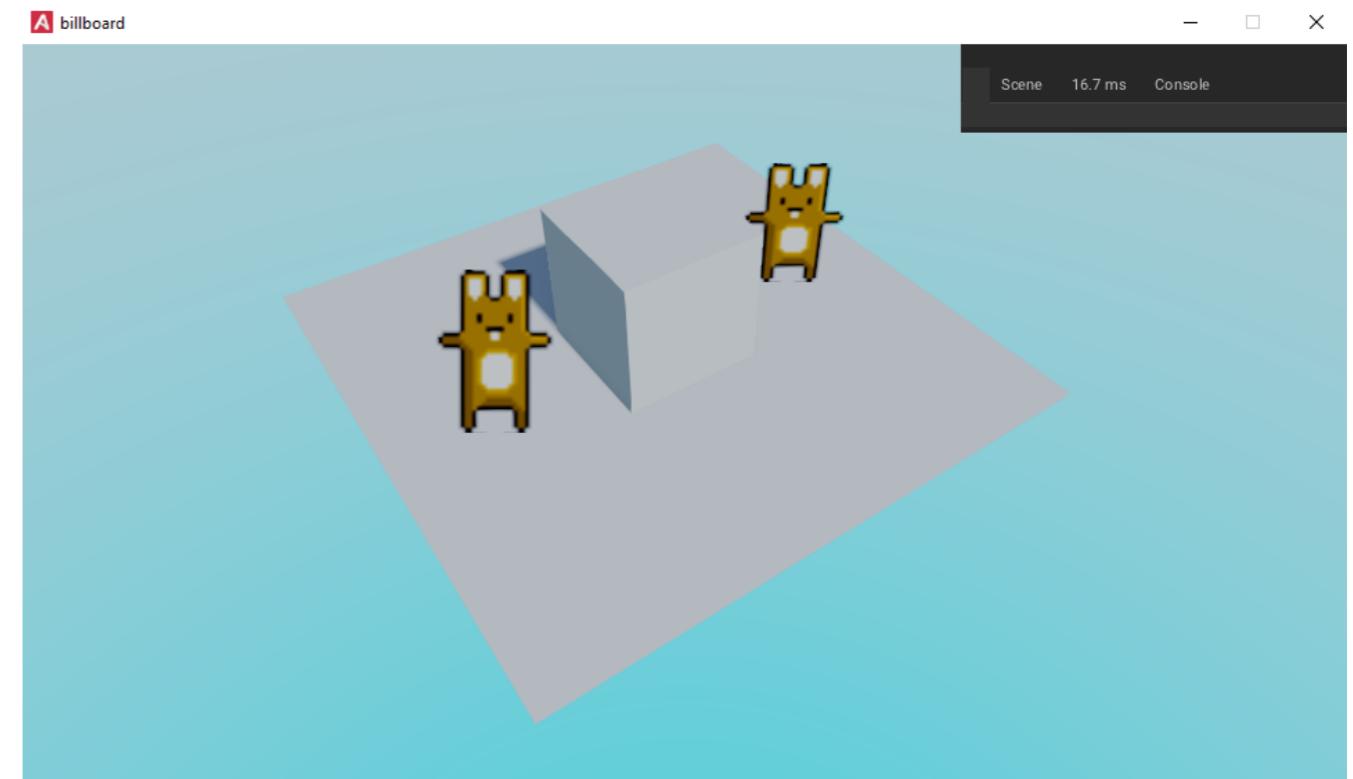
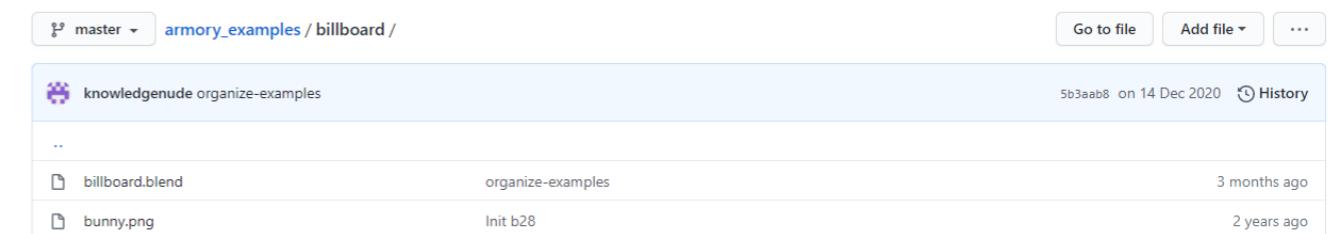
[Click here to watch](#)



# Highlighted example

## Billboard example

This example showcases the usage of billboards, and the minimal setup it requires in order to get it working. It is located under the billboards folder from the Armory\_examples repo: [LINK](#)



To enable billboards for your material, scroll down to the Armory Props tab and select either the spherical option or the cylindrical option depending on the kind of billboard you want.

# Showcase



Phour showcased Armory3D Project WIP Presentation on Discord



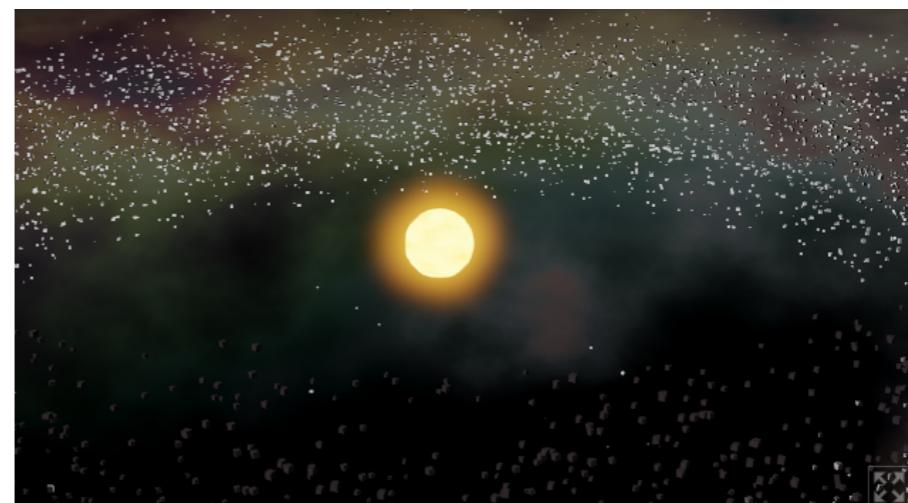
Cyclone showcased Dino Run on Discord



Crazy Pixel School showcased Ghost Rush on Youtube/Discord, made for Global Game Jam 2021



Cyclone showcased Fuel Run on Discord



QuantumCoderQC showcased Asteroid Belt with 10,000 cubes on Discord

# Support Armory



**Lubos Lenco**

- *Armory3D*
- *Iron*
- *Armorpaint*
- *And more...!*

**<https://armory3d.org/fund.html>**



**Robert Konrad**

- *Kha*
- *Kinc*
- *Kore*
- *And more...!*

**<https://www.patreon.com/RobDangerous>**