Top Repositories for GitHub Topics

In [ ]:

In [ ]:

Pick a website and describe your objective

- Browse through different sites and pick on to scrape. Check the "Project Ideas" section for inspiration.
- Identify the information you'd like to scrape from the site. Decide the format of the output CSV file.
- Summarize your project idea and outline your strategy in a Juptyer notebook. Use the "New" button above.

Project Outline

- We're going to scrape https://github.com/topics
- We'll get a list of topics. For each topic, we'll get topic title, topic page URL and topic description
- For each topic, we'll get the top 25 repositories in the topic from the topic page
- For each repository, we'll grab the repo name, username, stars and repo URL
- For each topic we'll create a CSV file in the following format:

  Repo Name,Username,Stars,Repo URL three.js,mrdoob,69700,https://github.com/mrdoob/three.js libgdx,libgdx,18300,https://github.com/libgdx/libgdx

Use the requests library to download web pages

In [3]:
```
!pip install requests --upgrade --quiet
```

In [4]:
```
import requests
```

In [5]:
```
topics_url = 'https://github.com/topics'
```

In [6]:
```
response = requests.get(topics_url)
```

In [7]:
```
response.status_code
```

Out[7]: 200

In [8]:
```
len(response.text)
```

Out[8]: 140463

In [9]:
```
page_contents = response.text
```

In [10]:
```
page_contents[:1000]
```

Out[10]: '\n\n<!DOCTYPE html>\n<html lang="en" data-color-mode="auto" data-light-theme="light" data-dark-theme="dark" data-a11y-animated-images="system">\n <head>\n   <meta charset="utf-8">\n   <link rel="dns-prefetch" href="https://github.githubassets.com">\n   <link rel="dns-prefetch" href="https://avatars.githubusercontent.com">\n   <link rel="dns-prefetc

```
h" href="https://github-cloud.s3.amazonaws.com">\n  <link rel="dns-prefetch" href="http
s://user-images.githubusercontent.com/">\n  <link rel="preconnect" href="https://github.
githubassets.com" crossorigin>\n  <link rel="preconnect" href="https://avatars.githubuse
rcontent.com">\n\n\n\n  <link crossorigin="anonymous" media="all" rel="stylesheet" href
="https://github.githubassets.com/assets/light-5178aee0ee76.css" /><link crossorigin="an
onymous" media="all" rel="stylesheet" href="https://github.githubassets.com/assets/dark-
217d4f9c8e70.css" /><link data-color-theme="dark_dimmed" crossorigin="anonymous" media
="all" rel="stylesheet" data-href="https://github.gith'
```

Use Beautiful Soup to parse and extract information

- Inspect the website's HTML source and identify the right URLs to download.
- Download and save web pages locally using the requests library.
- Create a function to automate downloading for different topics/search queries.

In [19]:
```
pip install beautifulsoup4
```

```
Requirement already satisfied: beautifulsoup4 in c:\users\jatin\anaconda3\lib\site-packa
ges (4.11.1)Note: you may need to restart the kernel to use updated packages.

Requirement already satisfied: soupsieve>1.2 in c:\users\jatin\anaconda3\lib\site-packag
es (from beautifulsoup4) (2.3.1)
```

In [20]:
```python
from bs4 import BeautifulSoup
```

In [21]:
```python
doc=BeautifulSoup(page_contents,'html.parser')
```

In [22]:
```python
type(doc)
```

Out[22]:
```
bs4.BeautifulSoup
```

In [23]:
```python
topic_title_p_tags=doc.find_all('p')
```

In [24]:
```python
len(topic_title_p_tags)
```

Out[24]:
67

In [25]:
```python
topic_title_p_tags[:5]
```

Out[25]:
```
[<p class="f4 color-fg-muted col-md-6 mx-auto">Browse popular topics on GitHub.</p>,
 <p class="f3 lh-condensed text-center Link--primary mb-0 mt-1">
        Objective-C
        </p>,
 <p class="f5 color-fg-muted text-center mb-0 mt-1">Objective-C is general purpose, obje
ct-oriented programming language used for macOS and iOS operating systems.</p>,
 <p class="f3 lh-condensed text-center Link--primary mb-0 mt-1">
        React Native
        </p>,
 <p class="f5 color-fg-muted text-center mb-0 mt-1">React Native is a JavaScript mobile
framework developed by Facebook.</p>]
```

(to be more specefic, we'll target class as well)

In [26]:
```python
selection_class='f3 lh-condensed mb-0 mt-1 Link--primary'
topic_title_p_tags=doc.find_all('p',{'class':selection_class})
```

In [27]:
```python
len(topic_title_p_tags)
```

Out[27]:
30

```
In [28]:  topic_title_p_tags
```

```
Out[28]: [<p class="f3 lh-condensed mb-0 mt-1 Link--primary">3D</p>,
          <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Ajax</p>,
          <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Algorithm</p>,
          <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Amp</p>,
          <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Android</p>,
          <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Angular</p>,
          <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Ansible</p>,
          <p class="f3 lh-condensed mb-0 mt-1 Link--primary">API</p>,
          <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Arduino</p>,
          <p class="f3 lh-condensed mb-0 mt-1 Link--primary">ASP.NET</p>,
          <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Atom</p>,
          <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Awesome Lists</p>,
          <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Amazon Web Services</p>,
          <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Azure</p>,
          <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Babel</p>,
          <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Bash</p>,
          <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Bitcoin</p>,
          <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Bootstrap</p>,
          <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Bot</p>,
          <p class="f3 lh-condensed mb-0 mt-1 Link--primary">C</p>,
          <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Chrome</p>,
          <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Chrome extension</p>,
          <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Command line interface</p>,
          <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Clojure</p>,
          <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Code quality</p>,
          <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Code review</p>,
          <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Compiler</p>,
          <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Continuous integration</p>,
          <p class="f3 lh-condensed mb-0 mt-1 Link--primary">COVID-19</p>,
          <p class="f3 lh-condensed mb-0 mt-1 Link--primary">C++</p>]
```

```
In [ ]:
```

```
In [29]: desc_selection_class='f5 color-fg-muted mb-0 mt-1'
         topic_description_p_tags=doc.find_all('p',{'class':desc_selection_class})
```

```
In [30]: topic_description_p_tags
```

```
Out[30]: [<p class="f5 color-fg-muted mb-0 mt-1">
                  3D modeling is the process of virtually developing the surface and structure
          of a 3D object.
                  </p>,
          <p class="f5 color-fg-muted mb-0 mt-1">
                  Ajax is a technique for creating interactive web applications.
                  </p>,
          <p class="f5 color-fg-muted mb-0 mt-1">
                  Algorithms are self-contained sequences that carry out a variety of tasks.
                  </p>,
          <p class="f5 color-fg-muted mb-0 mt-1">
                  Amp is a non-blocking concurrency library for PHP.
                  </p>,
          <p class="f5 color-fg-muted mb-0 mt-1">
                  Android is an operating system built by Google designed for mobile devices.
                  </p>,
          <p class="f5 color-fg-muted mb-0 mt-1">
                  Angular is an open source web application platform.
                  </p>,
          <p class="f5 color-fg-muted mb-0 mt-1">
                  Ansible is a simple and powerful automation engine.
                  </p>,
          <p class="f5 color-fg-muted mb-0 mt-1">
                  An API (Application Programming Interface) is a collection of protocols and s
          ubroutines for building software.
```

```
          </p>,
  <p class="f5 color-fg-muted mb-0 mt-1">
            Arduino is an open source hardware and software company and maker community.
          </p>,
  <p class="f5 color-fg-muted mb-0 mt-1">
            ASP.NET is a web framework for building modern web apps and services.
          </p>,
  <p class="f5 color-fg-muted mb-0 mt-1">
            Atom is a open source text editor built with web technologies.
          </p>,
  <p class="f5 color-fg-muted mb-0 mt-1">
            An awesome list is a list of awesome things curated by the community.
          </p>,
  <p class="f5 color-fg-muted mb-0 mt-1">
            Amazon Web Services provides on-demand cloud computing platforms on a subscri
ption basis.
          </p>,
  <p class="f5 color-fg-muted mb-0 mt-1">
            Azure is a cloud computing service created by Microsoft.
          </p>,
  <p class="f5 color-fg-muted mb-0 mt-1">
            Babel is a compiler for writing next generation JavaScript, today.
          </p>,
  <p class="f5 color-fg-muted mb-0 mt-1">
            Bash is a shell and command language interpreter for the GNU operating syste
m.
          </p>,
  <p class="f5 color-fg-muted mb-0 mt-1">
            Bitcoin is a cryptocurrency developed by Satoshi Nakamoto.
          </p>,
  <p class="f5 color-fg-muted mb-0 mt-1">
            Bootstrap is an HTML, CSS, and JavaScript framework.
          </p>,
  <p class="f5 color-fg-muted mb-0 mt-1">
            A bot is an application that runs automated tasks over the Internet.
          </p>,
  <p class="f5 color-fg-muted mb-0 mt-1">
            C is a general purpose programming language that first appeared in 1972.
          </p>,
  <p class="f5 color-fg-muted mb-0 mt-1">
            Chrome is a web browser from the tech company Google.
          </p>,
  <p class="f5 color-fg-muted mb-0 mt-1">
            Chrome extensions enable users to customize the Chrome browsing experience.
          </p>,
  <p class="f5 color-fg-muted mb-0 mt-1">
            A CLI, or command-line interface, is a console that helps users issue command
s to a program.
          </p>,
  <p class="f5 color-fg-muted mb-0 mt-1">
            Clojure is a dynamic, general-purpose programming language.
          </p>,
  <p class="f5 color-fg-muted mb-0 mt-1">
            Automate your code review with style, quality, security, and test-coverage ch
ecks when you need them.
          </p>,
  <p class="f5 color-fg-muted mb-0 mt-1">
            Ensure your code meets quality standards and ship with confidence.
          </p>,
  <p class="f5 color-fg-muted mb-0 mt-1">
            Compilers are software that translate higher-level programming languages to l
ower-level languages (e.g. machine code).
          </p>,
  <p class="f5 color-fg-muted mb-0 mt-1">
            Automatically build and test your code as you push it upstream, preventing bu
gs from being deployed to production.
```

```
                    </p>,
     <p class="f5 color-fg-muted mb-0 mt-1">
                The coronavirus disease 2019 (COVID-19) is an infectious disease caused by SA
     RS-CoV-2.
                </p>,
     <p class="f5 color-fg-muted mb-0 mt-1">
                C++ is a general purpose and object-oriented programming language.
                </p>]
```

In [31]: `topic_title_p_tags0=topic_title_p_tags[0]`

In [32]: `topic_title_p_tags0`

Out[32]:
```
<p class="f3 lh-condensed mb-0 mt-1 Link--primary">3D</p>
```

In [33]: `topic_title_p_tags0.parent`

Out[33]:
```
<a class="no-underline flex-1 d-flex flex-column" href="/topics/3d">
<p class="f3 lh-condensed mb-0 mt-1 Link--primary">3D</p>
<p class="f5 color-fg-muted mb-0 mt-1">
            3D modeling is the process of virtually developing the surface and structure o
f a 3D object.
          </p>
</a>
```

In [34]:
```
selection_class='f3 lh-condensed mb-0 mt-1 Link--primary'
topic_title_p_tags=doc.find_all('p',{'class':selection_class})
desc_selection_class='f5 color-fg-muted mb-0 mt-1'
topic_description_p_tags=doc.find_all('p',{'class':desc_selection_class})
topic_link_tags=doc.find_all('a',{'class':'no-underline flex-1 d-flex flex-column'})
```

In [35]: `topic_link_tags=doc.find_all('a',{'class':'no-underline flex-1 d-flex flex-column'})`

In [36]: `len(topic_link_tags)`

Out[36]: 30

In [37]: `topic_link_tags[0]`

Out[37]:
```
<a class="no-underline flex-1 d-flex flex-column" href="/topics/3d">
<p class="f3 lh-condensed mb-0 mt-1 Link--primary">3D</p>
<p class="f5 color-fg-muted mb-0 mt-1">
            3D modeling is the process of virtually developing the surface and structure o
f a 3D object.
          </p>
</a>
```

In [38]: `topic_link_tags[0]['href']`

Out[38]: `'/topics/3d'`

In [39]:
```
topic0_url="https://github.com"+ topic_link_tags[0]['href']
print(topic0_url)
```

```
https://github.com/topics/3d
```

In [87]: `topic_title_p_tags`

Out[87]:
```
[<p class="f3 lh-condensed mb-0 mt-1 Link--primary">3D</p>,
 <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Ajax</p>,
 <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Algorithm</p>,
 <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Amp</p>,
 <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Android</p>,
 <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Angular</p>,
```

```
        <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Ansible</p>,
        <p class="f3 lh-condensed mb-0 mt-1 Link--primary">API</p>,
        <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Arduino</p>,
        <p class="f3 lh-condensed mb-0 mt-1 Link--primary">ASP.NET</p>,
        <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Atom</p>,
        <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Awesome Lists</p>,
        <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Amazon Web Services</p>,
        <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Azure</p>,
        <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Babel</p>,
        <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Bash</p>,
        <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Bitcoin</p>,
        <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Bootstrap</p>,
        <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Bot</p>,
        <p class="f3 lh-condensed mb-0 mt-1 Link--primary">C</p>,
        <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Chrome</p>,
        <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Chrome extension</p>,
        <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Command line interface</p>,
        <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Clojure</p>,
        <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Code quality</p>,
        <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Code review</p>,
        <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Compiler</p>,
        <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Continuous integration</p>,
        <p class="f3 lh-condensed mb-0 mt-1 Link--primary">COVID-19</p>,
        <p class="f3 lh-condensed mb-0 mt-1 Link--primary">C++</p>]
```

In [88]:
```
topic_title_p_tags[:5]
```

Out[88]:
```
[<p class="f3 lh-condensed mb-0 mt-1 Link--primary">3D</p>,
 <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Ajax</p>,
 <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Algorithm</p>,
 <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Amp</p>,
 <p class="f3 lh-condensed mb-0 mt-1 Link--primary">Android</p>]
```

In [89]:
```
topic_title_p_tags[0]
```

Out[89]:
```
<p class="f3 lh-condensed mb-0 mt-1 Link--primary">3D</p>
```

In [90]:
```
topic_title_p_tags[0].text
```

Out[90]:
```
'3D'
```

whole list of topics below

In [ ]:

In [91]:
```
topic_titles = []

for   tag in topic_title_p_tags:
    {
        topic_titles.append(tag.text)
    }
print (topic_titles)
```

```
['3D', 'Ajax', 'Algorithm', 'Amp', 'Android', 'Angular', 'Ansible', 'API', 'Arduino', 'A
SP.NET', 'Atom', 'Awesome Lists', 'Amazon Web Services', 'Azure', 'Babel', 'Bash', 'Bitc
oin', 'Bootstrap', 'Bot', 'C', 'Chrome', 'Chrome extension', 'Command line interface',
'Clojure', 'Code quality', 'Code review', 'Compiler', 'Continuous integration', 'COVID-1
9', 'C++']
```

whole list of topic descripton below

In [ ]:

```
In [92]:  topic_descriptions=[]

          for descriptions in topic_description_p_tags:
              {
                  topic_descriptions.append(descriptions.text)
              }
          print (topic_descriptions)
```

['\n   3D modeling is the process of virtually developing the surface and structu
re of a 3D object.\n   ', '\n   Ajax is a technique for creating interactive
web applications.\n   ', '\n   Algorithms are self-contained sequences that
carry out a variety of tasks.\n   ', '\n   Amp is a non-blocking concurrency
library for PHP.\n   ', '\n   Android is an operating system built by Google
designed for mobile devices.\n   ', '\n   Angular is an open source web appl
ication platform.\n   ', '\n   Ansible is a simple and powerful automation e
ngine.\n   ', '\n   An API (Application Programming Interface) is a collecti
on of protocols and subroutines for building software.\n   ', '\n   Arduino
is an open source hardware and software company and maker community.\n   ', '\n
       ASP.NET is a web framework for building modern web apps and services.\n   ',
'\n   Atom is a open source text editor built with web technologies.\n   ',
'\n   An awesome list is a list of awesome things curated by the community.\n
    ', '\n   Amazon Web Services provides on-demand cloud computing platforms on
a subscription basis.\n   ', '\n   Azure is a cloud computing service create
d by Microsoft.\n   ', '\n   Babel is a compiler for writing next generation
JavaScript, today.\n   ', '\n   Bash is a shell and command language interpr
eter for the GNU operating system.\n   ', '\n   Bitcoin is a cryptocurrency
developed by Satoshi Nakamoto.\n   ', '\n   Bootstrap is an HTML, CSS, and J
avaScript framework.\n   ', '\n   A bot is an application that runs automate
d tasks over the Internet.\n   ', '\n   C is a general purpose programming l
anguage that first appeared in 1972.\n   ', '\n   Chrome is a web browser fr
om the tech company Google.\n   ', '\n   Chrome extensions enable users to c
ustomize the Chrome browsing experience.\n   ', '\n   A CLI, or command-line
interface, is a console that helps users issue commands to a program.\n   ', '\n
       Clojure is a dynamic, general-purpose programming language.\n   ', '\n
   Automate your code review with style, quality, security, and test-coverage checks wh
en you need them.\n   ', '\n   Ensure your code meets quality standards and
ship with confidence.\n   ', '\n   Compilers are software that translate hig
her-level programming languages to lower-level languages (e.g. machine code).\n
', '\n   Automatically build and test your code as you push it upstream, preventi
ng bugs from being deployed to production.\n   ', '\n   The coronavirus dise
ase 2019 (COVID-19) is an infectious disease caused by SARS-CoV-2.\n   ', '\n
   C++ is a general purpose and object-oriented programming language.\n   ']

```
In [93]:  topic_descriptions=[]

          for descriptions in topic_description_p_tags:
              {
                  topic_descriptions.append(descriptions.text.strip())
              }
          print (topic_descriptions)
```

['3D modeling is the process of virtually developing the surface and structure of a 3D o
bject.', 'Ajax is a technique for creating interactive web applications.', 'Algorithms a
re self-contained sequences that carry out a variety of tasks.', 'Amp is a non-blocking
concurrency library for PHP.', 'Android is an operating system built by Google designed
for mobile devices.', 'Angular is an open source web application platform.', 'Ansible is
a simple and powerful automation engine.', 'An API (Application Programming Interface) i
s a collection of protocols and subroutines for building software.', 'Arduino is an open
source hardware and software company and maker community.', 'ASP.NET is a web framework
for building modern web apps and services.', 'Atom is a open source text editor built wi
th web technologies.', 'An awesome list is a list of awesome things curated by the commu
nity.', 'Amazon Web Services provides on-demand cloud computing platforms on a subscript
ion basis.', 'Azure is a cloud computing service created by Microsoft.', 'Babel is a com
piler for writing next generation JavaScript, today.', 'Bash is a shell and command lang
uage interpreter for the GNU operating system.', 'Bitcoin is a cryptocurrency developed
by Satoshi Nakamoto.', 'Bootstrap is an HTML, CSS, and JavaScript framework.', 'A bot is

an application that runs automated tasks over the Internet.', 'C is a general purpose programming language that first appeared in 1972.', 'Chrome is a web browser from the tech company Google.', 'Chrome extensions enable users to customize the Chrome browsing experience.', 'A CLI, or command-line interface, is a console that helps users issue commands to a program.', 'Clojure is a dynamic, general-purpose programming language.', 'Automate your code review with style, quality, security, and test-coverage checks when you need them.', 'Ensure your code meets quality standards and ship with confidence.', 'Compilers are software that translate higher-level programming languages to lower-level languages (e.g. machine code).', 'Automatically build and test your code as you push it upstream, preventing bugs from being deployed to production.', 'The coronavirus disease 2019 (COVID-19) is an infectious disease caused by SARS-CoV-2.', 'C++ is a general purpose and object-oriented programming language.']

In [94]:
```python
topic_descriptions[:5]
```

Out[94]: ['3D modeling is the process of virtually developing the surface and structure of a 3D object.',
 'Ajax is a technique for creating interactive web applications.',
 'Algorithms are self-contained sequences that carry out a variety of tasks.',
 'Amp is a non-blocking concurrency library for PHP.',
 'Android is an operating system built by Google designed for mobile devices.']

In [ ]:

In [95]:
```python
topic_url=[]

for url in topic_link_tags:
{
    topic_url.append(url.text)
}

print(topic_url)
```

['\n3D\n\n   3D modeling is the process of virtually developing the surface and structure of a 3D object.\n   \n', '\nAjax\n\n   Ajax is a technique for creating interactive web applications.\n   \n', '\nAlgorithm\n\n   Algorithms are self-contained sequences that carry out a variety of tasks.\n   \n', '\nAmp\n\n   Amp is a non-blocking concurrency library for PHP.\n   \n', '\nAndroid\n\n   Android is an operating system built by Google designed for mobile devices.\n   \n', '\nAngular\n\n   Angular is an open source web application platform.\n   \n', '\nAnsible\n\n   Ansible is a simple and powerful automation engine.\n   \n', '\nAPI\n\n   An API (Application Programming Interface) is a collection of protocols and subroutines for building software.\n   \n', '\nArduino\n\n   Arduino is an open source hardware and software company and maker community.\n   \n', '\nASP.NET\n\n   ASP.NET is a web framework for building modern web apps and services.\n   \n', '\nAtom\n\n   Atom is a open source text editor built with web technologies.\n   \n', '\nAwesome Lists\n\n   An awesome list is a list of awesome things curated by the community.\n   \n', '\nAmazon Web Services\n\n   Amazon Web Services provides on-demand cloud computing platforms on a subscription basis.\n   \n', '\nAzure\n\n   Azure is a cloud computing service created by Microsoft.\n   \n', '\nBabel\n\n   Babel is a compiler for writing next generation JavaScript, today.\n   \n', '\nBash\n\n   Bash is a shell and command language interpreter for the GNU operating system.\n   \n', '\nBitcoin\n\n   Bitcoin is a cryptocurrency developed by Satoshi Nakamoto.\n   \n', '\nBootstrap\n\n   Bootstrap is an HTML, CSS, and JavaScript framework.\n   \n', '\nBot\n\n   A bot is an application that runs automated tasks over the Internet.\n   \n', '\nC\n\n   C is a general purpose programming language that first appeared in 1972.\n   \n', '\nChrome\n\n   Chrome is a web browser from the tech company Google.\n   \n', '\nChrome extension\n\n   Chrome extensions enable users to customize the Chrome browsing experience.\n   \n', '\nCommand line interface\n\n   A CLI, or command-line interface, is a console that helps users issue commands to a program.\n   \n', '\nClojure\n\n   Clojure is a dynamic, general-purpose programming language.\n   \n', '\nCode quality\n\n   Automate your code review with style, quality, security, and test-coverage checks when you need them.\n   \n', '\nCode review\n\n   Ensure your code meets quality standards and ship with confidence.\n   \n', '\nCompiler\n\n   Compilers are software

that translate higher-level programming languages to lower-level languages (e.g. machine code).\n   \n', '\nContinuous integration\n\n   Automatically build and test your code as you push it upstream, preventing bugs from being deployed to production.\n   \n', '\nCOVID-19\n\n   The coronavirus disease 2019 (COVID-19) is an infec tious disease caused by SARS-CoV-2.\n   \n', '\nC++\n\n   C++ is a general p urpose and object-oriented programming language.\n   \n']

In [96]:
```python
topic_url=[]

for url in topic_link_tags:
 {
    topic_url.append(url['href'])
 }

print(topic_url)
```

['/topics/3d', '/topics/ajax', '/topics/algorithm', '/topics/amphp', '/topics/android', '/topics/angular', '/topics/ansible', '/topics/api', '/topics/arduino', '/topics/aspne t', '/topics/atom', '/topics/awesome', '/topics/aws', '/topics/azure', '/topics/babel', '/topics/bash', '/topics/bitcoin', '/topics/bootstrap', '/topics/bot', '/topics/c', '/to pics/chrome', '/topics/chrome-extension', '/topics/cli', '/topics/clojure', '/topics/cod e-quality', '/topics/code-review', '/topics/compiler', '/topics/continuous-integration', '/topics/covid-19', '/topics/cpp']

In [97]:
```python
topic_url=[]
base_url= 'https://github.com'

for url in topic_link_tags:
    {
    topic_url.append(base_url + url['href'])
 }

print(topic_url)
```

['https://github.com/topics/3d', 'https://github.com/topics/ajax', 'https://github.com/t opics/algorithm', 'https://github.com/topics/amphp', 'https://github.com/topics/androi d', 'https://github.com/topics/angular', 'https://github.com/topics/ansible', 'https://g ithub.com/topics/api', 'https://github.com/topics/arduino', 'https://github.com/topics/a spnet', 'https://github.com/topics/atom', 'https://github.com/topics/awesome', 'https:// github.com/topics/aws', 'https://github.com/topics/azure', 'https://github.com/topics/ba bel', 'https://github.com/topics/bash', 'https://github.com/topics/bitcoin', 'https://gi thub.com/topics/bootstrap', 'https://github.com/topics/bot', 'https://github.com/topics/ c', 'https://github.com/topics/chrome', 'https://github.com/topics/chrome-extension', 'h ttps://github.com/topics/cli', 'https://github.com/topics/clojure', 'https://github.com/ topics/code-quality', 'https://github.com/topics/code-review', 'https://github.com/topic s/compiler', 'https://github.com/topics/continuous-integration', 'https://github.com/top ics/covid-19', 'https://github.com/topics/cpp']

In [98]:
```python
!pip install pandas
```

Requirement already satisfied: pandas in c:\users\jatin\anaconda3\lib\site-packages (1. 4.2)
Requirement already satisfied: pytz>=2020.1 in c:\users\jatin\anaconda3\lib\site-package s (from pandas) (2021.3)
Requirement already satisfied: python-dateutil>=2.8.1 in c:\users\jatin\anaconda3\lib\si te-packages (from pandas) (2.8.2)
Requirement already satisfied: numpy>=1.18.5 in c:\users\jatin\anaconda3\lib\site-packag es (from pandas) (1.21.5)
Requirement already satisfied: six>=1.5 in c:\users\jatin\anaconda3\lib\site-packages (f rom python-dateutil>=2.8.1->pandas) (1.16.0)

In [99]:
```python
import pandas as pd
```

In [100…
```python
topics_dictonary={
    'title':topic_titles,
    'decription':topic_descriptions,
```

```
        'url':topic_url
    }
```

In [101... `topics_df=pd.DataFrame(topics_dictonary)`

In [102... `topics_df`

Out[102]:

	title	decription	url
0	3D	3D modeling is the process of virtually develo...	https://github.com/topics/3d
1	Ajax	Ajax is a technique for creating interactive w...	https://github.com/topics/ajax
2	Algorithm	Algorithms are self-contained sequences that c...	https://github.com/topics/algorithm
3	Amp	Amp is a non-blocking concurrency library for ...	https://github.com/topics/amphp
4	Android	Android is an operating system built by Google...	https://github.com/topics/android
5	Angular	Angular is an open source web application plat...	https://github.com/topics/angular
6	Ansible	Ansible is a simple and powerful automation en...	https://github.com/topics/ansible
7	API	An API (Application Programming Interface) is ...	https://github.com/topics/api
8	Arduino	Arduino is an open source hardware and softwar...	https://github.com/topics/arduino
9	ASP.NET	ASP.NET is a web framework for building modern...	https://github.com/topics/aspnet
10	Atom	Atom is a open source text editor built with w...	https://github.com/topics/atom
11	Awesome Lists	An awesome list is a list of awesome things cu...	https://github.com/topics/awesome
12	Amazon Web Services	Amazon Web Services provides on-demand cloud c...	https://github.com/topics/aws
13	Azure	Azure is a cloud computing service created by ...	https://github.com/topics/azure
14	Babel	Babel is a compiler for writing next generatio...	https://github.com/topics/babel
15	Bash	Bash is a shell and command language interpret...	https://github.com/topics/bash
16	Bitcoin	Bitcoin is a cryptocurrency developed by Satos...	https://github.com/topics/bitcoin
17	Bootstrap	Bootstrap is an HTML, CSS, and JavaScript fram...	https://github.com/topics/bootstrap
18	Bot	A bot is an application that runs automated ta...	https://github.com/topics/bot
19	C	C is a general purpose programming language th...	https://github.com/topics/c
20	Chrome	Chrome is a web browser from the tech company ...	https://github.com/topics/chrome
21	Chrome extension	Chrome extensions enable users to customize th...	https://github.com/topics/chrome-extension
22	Command line interface	A CLI, or command-line interface, is a console...	https://github.com/topics/cli
23	Clojure	Clojure is a dynamic, general-purpose programm...	https://github.com/topics/clojure

24	Code quality	Automate your code review with style, quality,...	https://github.com/topics/code-quality
25	Code review	Ensure your code meets quality standards and s...	https://github.com/topics/code-review
26	Compiler	Compilers are software that translate higher-l...	https://github.com/topics/compiler
27	Continuous integration	Automatically build and test your code as you ...	https://github.com/topics/continuous-integration
28	COVID-19	The coronavirus disease 2019 (COVID-19) is an ...	https://github.com/topics/covid-19
29	C++	C++ is a general purpose and object-oriented p...	https://github.com/topics/cpp

Create CSV file(s) with the extracted information

```
In [103...  topics_df.to_csv('topics.csv')
```

```
In [104...  topics_df.to_csv('topics.csv',index=None)
```

```
In [ ]:
```

Getting info out of a topic page

```
In [105...  topic_page_url = topic_url[0]
```

```
In [106...  topic_page_url
```

```
Out[106]:  'https://github.com/topics/3d'
```

```
In [107...  response= requests.get(topic_page_url)
```

```
In [108...  response.status_code
```

```
Out[108]:  200
```

```
In [109...  len(response.text)
```

```
Out[109]:  431117
```

```
In [110...  topic_doc=BeautifulSoup(response.text,'html.parser')
```

```
In [120...  topic_doc
```

```
Out[120]:  <!DOCTYPE html>

<html data-a11y-animated-images="system" data-color-mode="auto" data-dark-theme="dark" data-light-theme="light" lang="en">
<head>
<meta charset="utf-8"/>
<link href="https://github.githubassets.com" rel="dns-prefetch"/>
<link href="https://avatars.githubusercontent.com" rel="dns-prefetch"/>
<link href="https://github-cloud.s3.amazonaws.com" rel="dns-prefetch"/>
<link href="https://user-images.githubusercontent.com/" rel="dns-prefetch"/>
<link crossorigin="" href="https://github.githubassets.com" rel="preconnect"/>
<link href="https://avatars.githubusercontent.com" rel="preconnect"/>
<link crossorigin="anonymous" href="https://github.githubassets.com/assets/light-5178aee
```

0ee76.css" media="all" rel="stylesheet"><link crossorigin="anonymous" href="https://github.githubassets.com/assets/dark-217d4f9c8e70.css" media="all" rel="stylesheet"><link crossorigin="anonymous" data-color-theme="dark_dimmed" data-href="https://github.githubassets.com/assets/dark_dimmed-0adfa28f0e68.css" media="all" rel="stylesheet"><link crossorigin="anonymous" data-color-theme="dark_high_contrast" data-href="https://github.githubassets.com/assets/dark_high_contrast-1c8575b36644.css" media="all" rel="stylesheet"><link crossorigin="anonymous" data-color-theme="dark_colorblind" data-href="https://github.githubassets.com/assets/dark_colorblind-5113d2be20b0.css" media="all" rel="stylesheet"><link crossorigin="anonymous" data-color-theme="light_colorblind" data-href="https://github.githubassets.com/assets/light_colorblind-c96add742484.css" media="all" rel="stylesheet"><link crossorigin="anonymous" data-color-theme="light_high_contrast" data-href="https://github.githubassets.com/assets/light_high_contrast-290f92f5e867.css" media="all" rel="stylesheet"/><link crossorigin="anonymous" data-color-theme="light_tritanopia" data-href="https://github.githubassets.com/assets/light_tritanopia-cdd88f146bf7.css" media="all" rel="stylesheet"/><link crossorigin="anonymous" data-color-theme="dark_tritanopia" data-href="https://github.githubassets.com/assets/dark_tritanopia-2171ea0f078b.css" media="all" rel="stylesheet"/>
<link crossorigin="anonymous" href="https://github.githubassets.com/assets/primer-1c02b272deb7.css" media="all" rel="stylesheet"/>
<link crossorigin="anonymous" href="https://github.githubassets.com/assets/global-260824118eab.css" media="all" rel="stylesheet"/>
<link crossorigin="anonymous" href="https://github.githubassets.com/assets/github-894171824b44.css" media="all" rel="stylesheet"/>
<link crossorigin="anonymous" href="https://github.githubassets.com/assets/site-e22f478d19d0.css" media="all" rel="stylesheet"/>
<link crossorigin="anonymous" href="https://github.githubassets.com/assets/explore-91bd47378abc.css" media="all" rel="stylesheet"/>
<script crossorigin="anonymous" defer="defer" src="https://github.githubassets.com/assets/wp-runtime-ce9429d0b36d.js" type="application/javascript"></script>
<script crossorigin="anonymous" defer="defer" src="https://github.githubassets.com/assets/vendors-node_modules_manuelpuyol_turbo_dist_turbo_es2017-esm_js-8af9baefab9e.js" type="application/javascript"></script>
<script crossorigin="anonymous" defer="defer" src="https://github.githubassets.com/assets/vendors-node_modules_stacktrace-parser_dist_stack-trace-parser_esm_js-node_modules_github_bro-d351f6-c1d63d230b29.js" type="application/javascript"></script>
<script crossorigin="anonymous" defer="defer" src="https://github.githubassets.com/assets/environment-7767200f5af7.js" type="application/javascript"></script>
<script crossorigin="anonymous" defer="defer" src="https://github.githubassets.com/assets/vendors-node_modules_selector-observer_dist_index_esm_js-650337916dbd.js" type="application/javascript"></script>
<script crossorigin="anonymous" defer="defer" src="https://github.githubassets.com/assets/vendors-node_modules_delegated-events_dist_index_js-node_modules_github_details-dialog-elemen-63debe-4a2f37f7419e.js" type="application/javascript"></script>
<script crossorigin="anonymous" defer="defer" src="https://github.githubassets.com/assets/vendors-node_modules_fzy_js_index_js-node_modules_github_combobox-nav_dist_index_js-node_modu-344bff-2d497eaa2bcd.js" type="application/javascript"></script>
<script crossorigin="anonymous" defer="defer" src="https://github.githubassets.com/assets/vendors-node_modules_github_filter-input-element_dist_index_js-node_modules_github_remote-inp-5333cf-5c635d3b6c5a.js" type="application/javascript"></script>
<script crossorigin="anonymous" defer="defer" src="https://github.githubassets.com/assets/vendors-node_modules_github_catalyst_lib_index_js-node_modules_github_time-elements_dist_index_js-38c36a597184.js" type="application/javascript"></script>
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<script crossorigin="anonymous" defer="defer" src="https://github.githubassets.com/assets/vendors-node_modules_lit-html_lit-html_js-e954e8c01c93.js" type="application/javascript"></script>
<script crossorigin="anonymous" defer="defer" src="https://github.githubassets.com/assets/vendors-node_modules_github_mini-throttle_dist_index_js-node_modules_github_hotkey_dist_index-9f48bd-dd8913ac65b0.js" type="application/javascript"></script>
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index-bd1f73-6256737c3b34.js" type="application/javascript"></script>
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<script crossorigin="anonymous" defer="defer" src="https://github.githubassets.com/asset
s/vendors-node_modules_github_quote-selection_dist_index_js-node_modules_github_session-
resume_-332ba8-680cd0ecb5eb.js" type="application/javascript"></script>
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s/app_assets_modules_github_soft-nav_navigate_ts-0349195a5b04.js" type="application/java
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s/app_assets_modules_github_behaviors_keyboard-shortcuts-helper_ts-app_assets_modules_gi
thub_di-9b8a64-283dc3d9bdf7.js" type="application/javascript"></script>
<script crossorigin="anonymous" defer="defer" src="https://github.githubassets.com/asset
s/app_assets_modules_github_behaviors_task-list_ts-app_assets_modules_github_has-interac
tions_t-0091d6-b057f2423ab5.js" type="application/javascript"></script>
<script crossorigin="anonymous" defer="defer" src="https://github.githubassets.com/asset
s/app_assets_modules_github_behaviors_details_ts-app_assets_modules_github_updatable-con
tent_ts-8b783e70ec95.js" type="application/javascript"></script>
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s/app_assets_modules_github_behaviors_commenting_edit_ts-app_assets_modules_github_behav
iors_ht-83c235-db7959b5fff9.js" type="application/javascript"></script>
<script crossorigin="anonymous" defer="defer" src="https://github.githubassets.com/asset
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<script crossorigin="anonymous" defer="defer" src="https://github.githubassets.com/asset
s/vendors-node_modules_delegated-events_dist_index_js-node_modules_github_catalyst_lib_i
ndex_js-06ff533-b01316754e20.js" type="application/javascript"></script>
<script crossorigin="anonymous" defer="defer" src="https://github.githubassets.com/asset
s/notifications-global-47ba35d34d1d.js" type="application/javascript"></script>
<title>3d · GitHub Topics · GitHub</title>
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t-id"><meta content="3299545293c939a477ba7c31292aa7707d2a900ff9fba7ba60c6da2809e68e68" d
ata-pjax-transient="true" name="html-safe-nonce"/><meta content="eyJyZWZlcnJlciI6IiIsInJ
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me="visitor-hmac"/>
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<meta data-pjax-transient="" name="selected-link" value="/topics/3d"/>
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on"/>
<meta content="https://collector.github.com/github/collect" name="octolytics-url">
<meta content="" name="user-login"/>
<meta content="width=device-width" name="viewport"/>
<meta content="GitHub is where people build software. More than 83 million people use Gi
tHub to discover, fork, and contribute to over 200 million projects." name="descriptio
n"/>
<link href="/opensearch.xml" rel="search" title="GitHub" type="application/opensearchdes
cription+xml"/>
<link href="https://github.com/fluidicon.png" rel="fluid-icon" title="GitHub"/>
<meta content="1401488693436528" property="fb:app_id"/>
<meta content="app-id=1477376905" name="apple-itunes-app">
<meta content="https://github.com" property="og:url"/>
<meta content="GitHub" property="og:site_name"/>
<meta content="Build software better, together" property="og:title"/>
<meta content="GitHub is where people build software. More than 83 million people use Gi
tHub to discover, fork, and contribute to over 200 million projects." property="og:descr
iption"/>

```html
<meta content="https://github.githubassets.com/images/modules/open_graph/github-logo.pn
g" property="og:image"/>
<meta content="image/png" property="og:image:type"/>
<meta content="1200" property="og:image:width"/>
<meta content="1200" property="og:image:height"/>
<meta content="https://github.githubassets.com/images/modules/open_graph/github-mark.pn
g" property="og:image"/>
<meta content="image/png" property="og:image:type"/>
<meta content="1200" property="og:image:width"/>
<meta content="620" property="og:image:height"/>
<meta content="https://github.githubassets.com/images/modules/open_graph/github-octocat.
png" property="og:image"/>
<meta content="image/png" property="og:image:type"/>
<meta content="1200" property="og:image:width"/>
<meta content="620" property="og:image:height"/>
<meta content="github" property="twitter:site"/>
<meta content="13334762" property="twitter:site:id"/>
<meta content="github" property="twitter:creator"/>
<meta content="13334762" property="twitter:creator:id"/>
<meta content="summary_large_image" property="twitter:card"/>
<meta content="GitHub" property="twitter:title"/>
<meta content="GitHub is where people build software. More than 83 million people use Gi
tHub to discover, fork, and contribute to over 200 million projects." property="twitter:
description"/>
<meta content="https://github.githubassets.com/images/modules/open_graph/github-logo.pn
g" property="twitter:image:src"/>
<meta content="1200" property="twitter:image:width"/>
<meta content="1200" property="twitter:image:height"/>
<link href="https://github.githubassets.com/" rel="assets"/>
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<meta content="github.com" name="expected-hostname"/>
<meta content="IMAGE_METRIC_TRACKING,GEOJSON_AZURE_MAPS" name="enabled-features"/>
<meta content="fc6744fcfa39f7716a19333261a55c7425839708b7610003624e17a50667b17f" data-tu
rbo-track="reload" http-equiv="x-pjax-version"/>
<meta content="6c6055a606bcd835d15b56dd50bb44c95696a3d636b74694a3e0f2094903cbc5" data-tu
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<meta content="3db610cc84db12385ee6ccfea9ed5732832df2984174a0b806e919947a39857a" data-tu
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<meta content="no-preview" data-pjax-transient="" name="turbo-cache-control"/>
<meta content="logged-out env-production page-responsive" name="turbo-body-classes"/>
<meta content="https://api.github.com/_private/browser/stats" name="browser-stats-url"/>
<meta content="https://api.github.com/_private/browser/errors" name="browser-errors-ur
l"/>
<meta content="https://api.github.com/_private/browser/optimizely_client/errors" name="b
rowser-optimizely-client-errors-url"/>
<link color="#000000" href="https://github.githubassets.com/pinned-octocat.svg" rel="mas
k-icon"/>
<link class="js-site-favicon" href="https://github.githubassets.com/favicons/favicon.pn
g" rel="alternate icon" type="image/png"/>
<link class="js-site-favicon" href="https://github.githubassets.com/favicons/favicon.sv
g" rel="icon" type="image/svg+xml"/>
<meta content="#1e2327" name="theme-color"/>
<meta content="light dark" name="color-scheme">
<link crossorigin="use-credentials" href="/manifest.json" rel="manifest"/>
</meta></meta></meta></meta></link></link></link></link></link></link></head>
<body class="logged-out env-production page-responsive" style="word-wrap: break-word;">
<div class="position-relative js-header-wrapper">
<a class="px-2 py-4 color-bg-accent-emphasis color-fg-on-emphasis show-on-focus js-skip-
to-content" href="#start-of-content">Skip to content</a>
<span class="progress-pjax-loader js-pjax-loader-bar Progress position-fixed width-full"
data-view-component="true">
<span class="Progress-item progress-pjax-loader-bar left-0 top-0 color-bg-accent-emphasi
s" data-view-component="true" style="width: 0%;"></span>
</span>
```

```html
<script crossorigin="anonymous" defer="defer" src="https://github.githubassets.com/asset
s/vendors-node_modules_github_remote-form_dist_index_js-node_modules_delegated-events_di
st_inde-94fd67-417231a98525.js" type="application/javascript"></script>
<script crossorigin="anonymous" defer="defer" src="https://github.githubassets.com/asset
s/sessions-319092af3d33.js" type="application/javascript"></script>
<header class="Header-old header-logged-out js-details-container Details position-relati
ve f4 py-2" role="banner">
<div class="container-lg d-lg-flex flex-items-center p-responsive">
<div class="d-flex flex-justify-between flex-items-center">
<a aria-label="Homepage" class="mr-4 color-fg-inherit" data-ga-click="(Logged out) Heade
r, go to homepage, icon:logo-wordmark" href="https://github.com/">
<svg aria-hidden="true" class="octicon octicon-mark-github" data-view-component="true" h
eight="32" version="1.1" viewbox="0 0 16 16" width="32">
<path d="M8 0C3.58 0 0 3.58 0 8c0 3.54 2.29 6.53 5.47 7.59.4.07.55-.17.55-.38 0-.19-.01
-.82-.01-1.49-2.01.37-2.53-.49-2.69-.94-.09-.23-.48-.94-.82-1.13-.28-.15-.68-.52-.01-.5
3.63-.01 1.08.58 1.23.82.72 1.21 1.87.87 2.33.66.07-.52.28-.87.51-1.07-1.78-.2-3.64-.89-
3.64-3.95 0-.87.31-1.59.82-2.15-.08-.2-.36-1.02.08-2.12 0 0 .67-.21 2.2.82.64-.18 1.32-.
27 2-.27.68 0 1.36.09 2 .27 1.53-1.04 2.2-.82 2.2-.82.44 1.1.16 1.92.08 2.12.51.56.82 1.
27.82 2.15 0 3.07-1.87 3.75-3.65 3.95.29.25.54.73.54 1.48 0 1.07-.01 1.93-.01 2.2 0 .21.
15.46.55.38A8.013 8.013 0 0016 8c0-4.42-3.58-8-8-8z" fill-rule="evenodd"></path>
</svg>
</a>
<div class="d-lg-none css-truncate css-truncate-target width-fit p-2">
</div>
<div class="d-flex flex-items-center">
<a class="d-inline-block d-lg-none f5 no-underline border color-border-default rounded-2
px-2 py-1 mr-3 mr-sm-5 color-fg-inherit" data-hydro-click='{"event_type":"authenticatio
n.click","payload":{"location_in_page":"site header","repository_id":null,"auth_type":"S
IGN_UP","originating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-cl
ick-hmac="bb5c242d26174601d48fbc4c824acaf01b0b0b41d78d7b84f29910adcf53abed" href="/signu
p?ref_cta=Sign+up&amp;ref_loc=header+logged+out&amp;ref_page=%2Ftopics%2F3d&amp;source=h
eader">
                Sign up
            </a>
<button aria-expanded="false" aria-label="Toggle navigation" class="js-details-target bt
n-link d-lg-none mt-1 color-fg-inherit" data-view-component="true" type="button"> <svg a
ria-hidden="true" class="octicon octicon-three-bars" data-view-component="true" height
="24" version="1.1" viewbox="0 0 16 16" width="24">
<path d="M1 2.75A.75.75 0 011.75 2h12.5a.75.75 0 110 1.5H1.75A.75.75 0 011 2.75zm0 5A.7
5.75 0 011.75 7h12.5a.75.75 0 110 1.5H1.75A.75.75 0 011 7.75zM1.75 12a.75.75 0 100 1.5h1
2.5a.75.75 0 100-1.5H1.75z" fill-rule="evenodd"></path>
</svg>
</button> </div>
</div>
<div class="HeaderMenu HeaderMenu--logged-out position-fixed top-0 right-0 bottom-0 heig
ht-fit position-lg-relative d-lg-flex flex-justify-between flex-items-center flex-auto">
<div class="d-flex d-lg-none flex-justify-end border-bottom color-bg-subtle p-3">
<button aria-expanded="false" aria-label="Toggle navigation" class="js-details-target bt
n-link" data-view-component="true" type="button"> <svg aria-hidden="true" class="octicon
octicon-x color-fg-muted" data-view-component="true" height="24" version="1.1" viewbox
="0 0 24 24" width="24">
<path d="M5.72 5.72a.75.75 0 011.06 0L12 10.94l5.22-5.22a.75.75 0 111.06 1.06L13.06 12l
5.22 5.22a.75.75 0 11-1.06 1.06L12 13.06l-5.22 5.22a.75.75 0 01-1.06-1.06L10.94 12 5.72
6.78a.75.75 0 010-1.06z" fill-rule="evenodd"></path>
</svg>
</button> </div>
<nav aria-label="Global" class="mt-0 px-3 px-lg-0 mb-5 mb-lg-0">
<ul class="d-lg-flex list-style-none">
<li class="mr-0 mr-lg-3 position-relative flex-wrap flex-justify-between flex-items-cent
er border-bottom border-lg-bottom-0 d-block d-lg-flex flex-lg-nowrap flex-lg-items-cente
r">
<details class="HeaderMenu-details details-overlay details-reset width-full">
<summary class="HeaderMenu-summary HeaderMenu-link px-0 py-3 border-0 no-wrap d-block d-
lg-inline-block">
        Product
        <svg class="icon-chevon-down-mktg position-absolute position-lg-relative" fill
```

```
="none" viewbox="0 0 14 8" x="0" xml:space="preserve" y="0"><path d="M1,1l6.2,6L13,1"></
path></svg>
</summary>
<div class="dropdown-menu flex-auto rounded px-0 mt-0 pb-4 p-lg-4 position-relative posi
tion-lg-absolute left-0 left-lg-n4">
<ul class="list-style-none f5 pb-1">
<li>
<a class="lh-condensed-ultra d-block no-underline position-relative Link--primary text-b
old py-2" data-analytics-event='{"category":"Header dropdown (logged out), Product","act
ion":"click to go to Features","label":"ref_page:/topics/3d;ref_cta:Features;"}' href="/
features">
       Features
</a> </li>
<li>
<a class="lh-condensed-ultra d-block no-underline position-relative Link--secondary py-
2" data-analytics-event='{"category":"Header dropdown (logged out), Product","action":"c
lick to go to Mobile","label":"ref_page:/topics/3d;ref_cta:Mobile;"}' href="/mobile">
       Mobile
</a> </li>
<li>
<a class="lh-condensed-ultra d-block no-underline position-relative Link--secondary py-
2" data-analytics-event='{"category":"Header dropdown (logged out), Product","action":"c
lick to go to Actions","label":"ref_page:/topics/3d;ref_cta:Actions;"}' href="/features/
actions">
       Actions
</a> </li>
<li>
<a class="lh-condensed-ultra d-block no-underline position-relative Link--secondary py-
2" data-analytics-event='{"category":"Header dropdown (logged out), Product","action":"c
lick to go to Codespaces","label":"ref_page:/topics/3d;ref_cta:Codespaces;"}' href="/fea
tures/codespaces">
       Codespaces
</a> </li>
<li>
<a class="lh-condensed-ultra d-block no-underline position-relative Link--secondary py-
2" data-analytics-event='{"category":"Header dropdown (logged out), Product","action":"c
lick to go to Copilot","label":"ref_page:/topics/3d;ref_cta:Copilot;"}' href="/features/
copilot">
       Copilot
</a> </li>
<li>
<a class="lh-condensed-ultra d-block no-underline position-relative Link--secondary py-
2" data-analytics-event='{"category":"Header dropdown (logged out), Product","action":"c
lick to go to Packages","label":"ref_page:/topics/3d;ref_cta:Packages;"}' href="/feature
s/packages">
       Packages
</a> </li>
<li>
<a class="lh-condensed-ultra d-block no-underline position-relative Link--secondary py-
2" data-analytics-event='{"category":"Header dropdown (logged out), Product","action":"c
lick to go to Security","label":"ref_page:/topics/3d;ref_cta:Security;"}' href="/feature
s/security">
       Security
</a> </li>
<li>
<a class="lh-condensed-ultra d-block no-underline position-relative Link--secondary py-
2" data-analytics-event='{"category":"Header dropdown (logged out), Product","action":"c
lick to go to Code review","label":"ref_page:/topics/3d;ref_cta:Code review;"}' href="/f
eatures/code-review">
       Code review
</a> </li>
<li>
<a class="lh-condensed-ultra d-block no-underline position-relative Link--secondary py-
2" data-analytics-event='{"category":"Header dropdown (logged out), Product","action":"c
lick to go to Issues","label":"ref_page:/topics/3d;ref_cta:Issues;"}' href="/features/is
sues">
```

```
      Issues
</a> </li>
<li>
<a class="lh-condensed-ultra d-block no-underline position-relative Link--secondary py-
2" data-analytics-event='{"category":"Header dropdown (logged out), Product","action":"c
lick to go to Discussions","label":"ref_page:/topics/3d;ref_cta:Discussions;"}' href="/f
eatures/discussions">
      Discussions
</a> </li>
<li>
<a class="lh-condensed-ultra d-block no-underline position-relative Link--secondary py-
2" data-analytics-event='{"category":"Header dropdown (logged out), Product","action":"c
lick to go to Integrations","label":"ref_page:/topics/3d;ref_cta:Integrations;"}' href
="/features/integrations">
      Integrations
</a> </li>
<li>
<a class="lh-condensed-ultra d-block no-underline position-relative Link--primary text-b
old border-top pt-4 pb-2 mt-3" data-analytics-event='{"category":"Header dropdown (logge
d out), Product","action":"click to go to GitHub Sponsors","label":"ref_page:/topics/3d;
ref_cta:GitHub Sponsors;"}' href="/sponsors">
      GitHub Sponsors
</a> </li>
<li>
<a class="lh-condensed-ultra d-block no-underline position-relative Link--primary text-b
old py-2" data-analytics-event='{"category":"Header dropdown (logged out), Product","act
ion":"click to go to Customer stories","label":"ref_page:/topics/3d;ref_cta:Customer sto
ries;"}' href="/customer-stories">
      Customer stories
</a> </li>
</ul>
</div>
</details>
</li>
<li class="mr-0 mr-lg-3 position-relative flex-wrap flex-justify-between flex-items-cent
er border-bottom border-lg-bottom-0 d-block d-lg-flex flex-lg-nowrap flex-lg-items-cente
r">
<a class="HeaderMenu-link no-underline py-3 d-block d-lg-inline-block" data-analytics-ev
ent='{"category":"Header menu top item (logged out)","action":"click to go to Team","lab
el":"ref_page:/topics/3d;ref_cta:Team;"}' href="/team">Team</a>
</li>
<li class="mr-0 mr-lg-3 position-relative flex-wrap flex-justify-between flex-items-cent
er border-bottom border-lg-bottom-0 d-block d-lg-flex flex-lg-nowrap flex-lg-items-cente
r">
<a class="HeaderMenu-link no-underline py-3 d-block d-lg-inline-block" data-analytics-ev
ent='{"category":"Header menu top item (logged out)","action":"click to go to Enterpris
e","label":"ref_page:/topics/3d;ref_cta:Enterprise;"}' href="/enterprise">Enterprise</a>
</li>
<li class="mr-0 mr-lg-3 position-relative flex-wrap flex-justify-between flex-items-cent
er border-bottom border-lg-bottom-0 d-block d-lg-flex flex-lg-nowrap flex-lg-items-cente
r">
<details class="HeaderMenu-details details-overlay details-reset width-full">
<summary class="HeaderMenu-summary HeaderMenu-link px-0 py-3 border-0 no-wrap d-block d-
lg-inline-block">
        Explore
        <svg class="icon-chevon-down-mktg position-absolute position-lg-relative" fill
="none" viewbox="0 0 14 8" x="0" xml:space="preserve" y="0"><path d="M1,1l6.2,6L13,1"></
path></svg>
</summary>
<div class="dropdown-menu flex-auto rounded px-0 mt-0 pb-4 p-lg-4 position-relative posi
tion-lg-absolute left-0 left-lg-n4">
<ul class="list-style-none f5 pb-1">
<li>
<a class="lh-condensed-ultra d-block no-underline position-relative Link--primary text-b
old py-2" data-analytics-event='{"category":"Header dropdown (logged out), Explore","act
ion":"click to go to Explore GitHub","label":"ref_page:/topics/3d;ref_cta:Explore GitHu
```

```
b;"}' href="/explore">
      Explore GitHub
</a> </li>
<li class="color-fg-muted text-normal f6 text-mono mb-1 border-top pt-3 mt-3 mb-1">Learn
and contribute</li>
<li>
<a class="lh-condensed-ultra d-block no-underline position-relative Link--secondary py-
2" data-analytics-event='{"category":"Header dropdown (logged out), Explore","action":"c
lick to go to Topics","label":"ref_page:/topics/3d;ref_cta:Topics;"}' href="/topics">
      Topics
</a> </li>
<li>
<a class="lh-condensed-ultra d-block no-underline position-relative Link--secondary py-
2" data-analytics-event='{"category":"Header dropdown (logged out), Explore","action":"c
lick to go to Collections","label":"ref_page:/topics/3d;ref_cta:Collections;"}' href="/c
ollections">
      Collections
</a> </li>
<li>
<a class="lh-condensed-ultra d-block no-underline position-relative Link--secondary py-
2" data-analytics-event='{"category":"Header dropdown (logged out), Explore","action":"c
lick to go to Trending","label":"ref_page:/topics/3d;ref_cta:Trending;"}' href="/trendin
g">
      Trending
</a> </li>
<li>
<a class="lh-condensed-ultra d-block no-underline position-relative Link--secondary py-
2" data-analytics-event='{"category":"Header dropdown (logged out), Explore","action":"c
lick to go to Skills","label":"ref_page:/topics/3d;ref_cta:Skills;"}' href="https://skil
ls.github.com/">
      Skills
</a> </li>
<li>
<a class="lh-condensed-ultra d-block no-underline position-relative Link--secondary py-
2" data-analytics-event='{"category":"Header dropdown (logged out), Explore","action":"c
lick to go to GitHub Sponsors","label":"ref_page:/topics/3d;ref_cta:GitHub Sponsors;"}'
href="/sponsors/explore">
      GitHub Sponsors
</a> </li>
<li>
<a class="lh-condensed-ultra d-block no-underline position-relative Link--secondary py-
2" data-analytics-event='{"category":"Header dropdown (logged out), Explore","action":"c
lick to go to Open source guides","label":"ref_page:/topics/3d;ref_cta:Open source guide
s;"}' href="https://opensource.guide">
      Open source guides
</a> </li>
<li class="color-fg-muted text-normal f6 text-mono mb-1 border-top pt-3 mt-3 mb-1">Conne
ct with others</li>
<li>
<a class="lh-condensed-ultra d-block no-underline position-relative Link--secondary py-
2" data-analytics-event='{"category":"Header dropdown (logged out), Explore","action":"c
lick to go to The ReadME Project","label":"ref_page:/topics/3d;ref_cta:The ReadME Projec
t;"}' href="/readme">
      The ReadME Project
</a> </li>
<li>
<a class="lh-condensed-ultra d-block no-underline position-relative Link--secondary py-
2" data-analytics-event='{"category":"Header dropdown (logged out), Explore","action":"c
lick to go to Events","label":"ref_page:/topics/3d;ref_cta:Events;"}' href="/events">
      Events
</a> </li>
<li>
<a class="lh-condensed-ultra d-block no-underline position-relative Link--secondary py-
2" data-analytics-event='{"category":"Header dropdown (logged out), Explore","action":"c
lick to go to Community forum","label":"ref_page:/topics/3d;ref_cta:Community forum;"}'
href="https://github.community">
```

```html
      Community forum
</a> </li>
<li>
<a class="lh-condensed-ultra d-block no-underline position-relative Link--secondary py-
2" data-analytics-event='{"category":"Header dropdown (logged out), Explore","action":"c
lick to go to GitHub Education","label":"ref_page:/topics/3d;ref_cta:GitHub Educatio
n;"}' href="https://education.github.com">
      GitHub Education
</a> </li>
<li>
<a class="lh-condensed-ultra d-block no-underline position-relative Link--secondary py-
2" data-analytics-event='{"category":"Header dropdown (logged out), Explore","action":"c
lick to go to GitHub Stars program","label":"ref_page:/topics/3d;ref_cta:GitHub Stars pr
ogram;"}' href="https://stars.github.com">
      GitHub Stars program
</a> </li>
</ul>
</div>
</details>
</li>
<li class="mr-0 mr-lg-3 position-relative flex-wrap flex-justify-between flex-items-cent
er border-bottom border-lg-bottom-0 d-block d-lg-flex flex-lg-nowrap flex-lg-items-cente
r">
<a class="HeaderMenu-link no-underline py-3 d-block d-lg-inline-block" data-analytics-ev
ent='{"category":"Header menu top item (logged out)","action":"click to go to Marketplac
e","label":"ref_page:/topics/3d;ref_cta:Marketplace;"}' href="/marketplace">Marketplace
</a>
</li>
<li class="mr-0 mr-lg-3 position-relative flex-wrap flex-justify-between flex-items-cent
er border-bottom border-lg-bottom-0 d-block d-lg-flex flex-lg-nowrap flex-lg-items-cente
r">
<details class="HeaderMenu-details details-overlay details-reset width-full">
<summary class="HeaderMenu-summary HeaderMenu-link px-0 py-3 border-0 no-wrap d-block d-
lg-inline-block">
        Pricing
        <svg class="icon-chevon-down-mktg position-absolute position-lg-relative" fill
="none" viewbox="0 0 14 8" x="0" xml:space="preserve" y="0"><path d="M1,1l6.2,6L13,1"></
path></svg>
</summary>
<div class="dropdown-menu flex-auto rounded px-0 mt-0 pb-4 p-lg-4 position-relative posi
tion-lg-absolute left-0 left-lg-n4">
<ul class="list-style-none f5 pb-1">
<li>
<a class="lh-condensed-ultra d-block no-underline position-relative Link--primary text-b
old py-2" data-analytics-event='{"category":"Header dropdown (logged out), Pricing","act
ion":"click to go to Plans","label":"ref_page:/topics/3d;ref_cta:Plans;"}' href="/pricin
g">
      Plans
</a> </li>
<li>
<a class="lh-condensed-ultra d-block no-underline position-relative Link--secondary py-
2" data-analytics-event='{"category":"Header dropdown (logged out), Pricing","action":"c
lick to go to Compare plans","label":"ref_page:/topics/3d;ref_cta:Compare plans;"}' href
="/pricing#compare-features">
      Compare plans
</a> </li>
<li>
<a class="lh-condensed-ultra d-block no-underline position-relative Link--secondary py-
2" data-analytics-event='{"category":"Header dropdown (logged out), Pricing","action":"c
lick to go to Contact Sales","label":"ref_page:/topics/3d;ref_cta:Contact Sales;"}' href
="https://github.com/enterprise/contact">
      Contact Sales
</a> </li>
<li>
<a class="lh-condensed-ultra d-block no-underline position-relative Link--primary text-b
old border-top pt-4 pb-2 mt-3" data-analytics-event='{"category":"Header dropdown (logge
```

```
d out), Pricing","action":"click to go to Education","label":"ref_page:/topics/3d;ref_ct
a:Education;"}' href="https://education.github.com">
      Education
</a> </li>
</ul>
</div>
</details>
</li>
</ul>
</nav>
<div class="d-lg-flex flex-items-center px-3 px-lg-0 text-center text-lg-left">
<div class="d-lg-flex min-width-0 mb-3 mb-lg-0">
<div class="header-search flex-auto js-site-search position-relative flex-self-stretch f
lex-md-self-auto mb-3 mb-md-0 mr-0 mr-md-3 scoped-search site-scoped-search js-jump-to">
<div class="position-relative">
<!-- '"` --><!-- </textarea></xmp> --><form accept-charset="UTF-8" action="/topics/3d" a
ria-label="Site" class="js-site-search-form" data-scope-id="238400" data-scope-type="Top
ic" data-scoped-search-url="/topics/3d" data-turbo="false" data-unscoped-search-url="/se
arch" method="get" role="search">
<label class="form-control input-sm header-search-wrapper p-0 js-chromeless-input-contai
ner header-search-wrapper-jump-to position-relative d-flex flex-justify-between flex-ite
ms-center">
<input aria-autocomplete="list" aria-controls="jump-to-results" aria-expanded="false" ar
ia-haspopup="listbox" aria-label="Search" autocapitalize="off" autocomplete="off" class
="form-control input-sm header-search-input jump-to-field js-jump-to-field js-site-searc
h-focus js-site-search-field is-clearable" data-hotkey="s,/" data-jump-to-suggestions-pa
th="/_graphql/GetSuggestedNavigationDestinations" data-scoped-placeholder="Search" data-
test-selector="nav-search-input" data-unscoped-placeholder="Search GitHub" name="q" plac
eholder="Search" role="combobox" spellcheck="false" type="text" value=""/>
<input class="js-data-jump-to-suggestions-path-csrf" data-csrf="true" type="hidden" valu
e="7bD3QC809x0mkML2+JoPCDFE0gQfONfWgkaxwokhvQs9FRaX35EiNJHBoBtsuxogxsEdQ8DDEBXgtjDc64HUu
A==">
<input class="js-site-search-type-field" name="type" type="hidden"/>
<svg aria-hidden="true" class="mr-1 header-search-key-slash" height="20" width="22" xmln
s="http://www.w3.org/2000/svg"><path d="M3.5.5h12c1.7 0 3 1.3 3 3v13c0 1.7-1.3 3-3 3h-12
c-1.7 0-3-1.3-3-3v-13c0-1.7 1.3-3 3-3z" fill="none" opacity=".4" stroke="#979A9C"></path
><path d="M11.8 6L8 15.1h-.9L10.8 6h1z" fill="#979A9C"></path></svg>
<div class="Box position-absolute overflow-hidden d-none jump-to-suggestions js-jump-to-
suggestions-container">
<ul class="d-none js-jump-to-suggestions-template-container">
<li class="d-flex flex-justify-start flex-items-center p-0 f5 navigation-item js-navigat
ion-item js-jump-to-suggestion" role="option">
<a class="no-underline d-flex flex-auto flex-items-center jump-to-suggestions-path js-ju
mp-to-suggestion-path js-navigation-open p-2" data-item-type="suggestion" href="" tabind
ex="-1">
<div class="jump-to-octicon js-jump-to-octicon flex-shrink-0 mr-2 text-center d-none">
<svg aria-label="Repository" class="octicon octicon-repo js-jump-to-octicon-repo d-none
flex-shrink-0" data-view-component="true" height="16" role="img" title="Repository" vers
ion="1.1" viewbox="0 0 16 16" width="16">
<path d="M2 2.5A2.5 2.5 0 014.5 0h8.75a.75.75 0 01.75.75v12.5a.75.75 0 01-.75.75h-2.5a.7
5.75 0 110-1.5h1.75v-2h-8a1 1 0 00-.714 1.7.75.75 0 01-1.072 1.05A2.495 2.495 0 012 11.5
v-9zm10.5-1V9h-8c-.356 0-.694.074-1 .208V2.5a1 1 0 011-1h8zM5 12.25v3.25a.25.25 0 00.4.2
l1.45-1.087a.25.25 0 01.3 0L8.6 15.7a.25.25 0 00.4-.2v-3.25a.25.25 0 00-.25-.25h-3.5a.2
5.25 0 00-.25.25z" fill-rule="evenodd"></path>
</svg>
<svg aria-label="Project" class="octicon octicon-project js-jump-to-octicon-project d-no
ne flex-shrink-0" data-view-component="true" height="16" role="img" title="Project" vers
ion="1.1" viewbox="0 0 16 16" width="16">
<path d="M1.75 0A1.75 1.75 0 000 1.75v12.5C0 15.216.784 16 1.75 16h12.5A1.75 1.75 0 0016
14.25V1.75A1.75 1.75 0 0014.25 0H1.75zM1.5 1.75a.25.25 0 01.25-.25h12.5a.25.25 0 01.25.2
5v12.5a.25.25 0 01-.25.25H1.75a.25.25 0 01-.25-.25V1.75zM11.75 3a.75.75 0 00-.75.75v7.5
a.75.75 0 001.5 0v-7.5a.75.75 0 00-.75-.75zm-8.25.75a.75.75 0 011.5 0v5.5a.75.75 0 01-1.
5 0v-5.5zM8 3a.75.75 0 00-.75.75v3.5a.75.75 0 001.5 0v-3.5A.75.75 0 008 3z" fill-rule="e
venodd"></path>
</svg>
<svg aria-label="Search" class="octicon octicon-search js-jump-to-octicon-search d-none
```

```
flex-shrink-0" data-view-component="true" height="16" role="img" title="Search" version
="1.1" viewbox="0 0 16 16" width="16">
<path d="M11.5 7a4.499 4.499 0 11-8.998 0A4.499 4.499 0 0111.5 7zm-.82 4.74a6 6 0 111.06
-1.06l3.04 3.04a.75.75 0 11-1.06 1.06l-3.04-3.04z" fill-rule="evenodd"></path>
</svg>
</div>
<img alt="" aria-label="Team" class="avatar mr-2 flex-shrink-0 js-jump-to-suggestion-ava
tar d-none" height="28" src="" width="28"/>
<div class="jump-to-suggestion-name js-jump-to-suggestion-name flex-auto overflow-hidden
text-left no-wrap css-truncate css-truncate-target">
</div>
<div class="border rounded-2 flex-shrink-0 color-bg-subtle px-1 color-fg-muted ml-1 f6 d
-none js-jump-to-badge-search">
<span aria-label="in this topic" class="js-jump-to-badge-search-text-default d-none">
        In this topic
      </span>
<span aria-label="in all of GitHub" class="js-jump-to-badge-search-text-global d-none">
        All GitHub
      </span>
<span aria-hidden="true" class="d-inline-block ml-1 v-align-middle">↵</span>
</div>
<div aria-hidden="true" class="border rounded-2 flex-shrink-0 color-bg-subtle px-1 color
-fg-muted ml-1 f6 d-none d-on-nav-focus js-jump-to-badge-jump">
      Jump to
      <span class="d-inline-block ml-1 v-align-middle">↵</span>
</div>
</a>
</li>
</ul>
<ul class="d-none js-jump-to-no-results-template-container">
<li class="d-flex flex-justify-center flex-items-center f5 d-none js-jump-to-suggestion
p-2">
<span class="color-fg-muted">No suggested jump to results</span>
</li>
</ul>
<ul class="p-0 m-0 js-navigation-container jump-to-suggestions-results-container js-jump
-to-suggestions-results-container" id="jump-to-results" role="listbox">
<li class="d-flex flex-justify-start flex-items-center p-0 f5 navigation-item js-navigat
ion-item js-jump-to-scoped-search d-none" role="option">
<a class="no-underline d-flex flex-auto flex-items-center jump-to-suggestions-path js-ju
mp-to-suggestion-path js-navigation-open p-2" data-item-type="scoped_search" href="" tab
index="-1">
<div class="jump-to-octicon js-jump-to-octicon flex-shrink-0 mr-2 text-center d-none">
<svg aria-label="Repository" class="octicon octicon-repo js-jump-to-octicon-repo d-none
flex-shrink-0" data-view-component="true" height="16" role="img" title="Repository" vers
ion="1.1" viewbox="0 0 16 16" width="16">
<path d="M2 2.5A2.5 2.5 0 014.5 0h8.75a.75.75 0 01.75.75v12.5a.75.75 0 01-.75.75h-2.5a.7
5.75 0 110-1.5h1.75v-2h-8a1 1 0 00-.714 1.7.75.75 0 01-1.072 1.05A2.495 2.495 0 012 11.5
v-9zm10.5-1V9h-8c-.356 0-.694.074-1 .208V2.5a1 1 0 011-1h8zM5 12.25v3.25a.25.25 0 00.4.2
l1.45-1.087a.25.25 0 01.3 0L8.6 15.7a.25.25 0 00.4-.2v-3.25a.25.25 0 00-.25-.25h-3.5a.2
5.25 0 00-.25.25z" fill-rule="evenodd"></path>
</svg>
<svg aria-label="Project" class="octicon octicon-project js-jump-to-octicon-project d-no
ne flex-shrink-0" data-view-component="true" height="16" role="img" title="Project" vers
ion="1.1" viewbox="0 0 16 16" width="16">
<path d="M1.75 0A1.75 1.75 0 000 1.75v12.5C0 15.216.784 16 1.75 16h12.5A1.75 1.75 0 0016
14.25V1.75A1.75 1.75 0 0014.25 0H1.75zM1.5 1.75a.25.25 0 01.25-.25h12.5a.25.25 0 01.25.2
5v12.5a.25.25 0 01-.25.25H1.75a.25.25 0 01-.25-.25V1.75zM11.75 3a.75.75 0 00-.75.75v7.5
a.75.75 0 001.5 0v-7.5a.75.75 0 00-.75-.75zm-8.25.75a.75.75 0 011.5 0v5.5a.75.75 0 01-1.
5 0v-5.5zM8 3a.75.75 0 00-.75.75v3.5a.75.75 0 001.5 0v-3.5A.75.75 0 008 3z" fill-rule="e
venodd"></path>
</svg>
<svg aria-label="Search" class="octicon octicon-search js-jump-to-octicon-search d-none
 flex-shrink-0" data-view-component="true" height="16" role="img" title="Search" version
="1.1" viewbox="0 0 16 16" width="16">
<path d="M11.5 7a4.499 4.499 0 11-8.998 0A4.499 4.499 0 0111.5 7zm-.82 4.74a6 6 0 111.06
```

```
-1.06l3.04 3.04a.75.75 0 11-1.06 1.06l-3.04-3.04z" fill-rule="evenodd"></path>
</svg>
</div>
<img alt="" aria-label="Team" class="avatar mr-2 flex-shrink-0 js-jump-to-suggestion-ava
tar d-none" height="28" src="" width="28"/>
<div class="jump-to-suggestion-name js-jump-to-suggestion-name flex-auto overflow-hidden
 text-left no-wrap css-truncate css-truncate-target">
</div>
<div class="border rounded-2 flex-shrink-0 color-bg-subtle px-1 color-fg-muted ml-1 f6 d
-none js-jump-to-badge-search">
<span aria-label="in this topic" class="js-jump-to-badge-search-text-default d-none">
        In this topic
      </span>
<span aria-label="in all of GitHub" class="js-jump-to-badge-search-text-global d-none">
        All GitHub
      </span>
<span aria-hidden="true" class="d-inline-block ml-1 v-align-middle">↵</span>
</div>
<div aria-hidden="true" class="border rounded-2 flex-shrink-0 color-bg-subtle px-1 color
-fg-muted ml-1 f6 d-none d-on-nav-focus js-jump-to-badge-jump">
      Jump to
      <span class="d-inline-block ml-1 v-align-middle">↵</span>
</div>
</a>
</li>
<li class="d-flex flex-justify-start flex-items-center p-0 f5 navigation-item js-navigat
ion-item js-jump-to-owner-scoped-search d-none" role="option">
<a class="no-underline d-flex flex-auto flex-items-center jump-to-suggestions-path js-ju
mp-to-suggestion-path js-navigation-open p-2" data-item-type="owner_scoped_search" href
="" tabindex="-1">
<div class="jump-to-octicon js-jump-to-octicon flex-shrink-0 mr-2 text-center d-none">
<svg aria-label="Repository" class="octicon octicon-repo js-jump-to-octicon-repo d-none
 flex-shrink-0" data-view-component="true" height="16" role="img" title="Repository" ver
sion="1.1" viewbox="0 0 16 16" width="16">
<path d="M2 2.5A2.5 2.5 0 014.5 0h8.75a.75.75 0 01.75.75v12.5a.75.75 0 01-.75.75h-2.5a.7
5.75 0 110-1.5h1.75v-2h-8a1 1 0 00-.714 1.7.75.75 0 01-1.072 1.05A2.495 2.495 0 012 11.5
v-9zm10.5-1V9h-8c-.356 0-.694.074-1 .208V2.5a1 1 0 011-1h8zM5 12.25v3.25a.25.25 0 00.4.2
l1.45-1.087a.25.25 0 01.3 0L8.6 15.7a.25.25 0 00.4-.2v-3.25a.25.25 0 00-.25-.25h-3.5a.2
5.25 0 00-.25.25z" fill-rule="evenodd"></path>
</svg>
<svg aria-label="Project" class="octicon octicon-project js-jump-to-octicon-project d-no
ne flex-shrink-0" data-view-component="true" height="16" role="img" title="Project" vers
ion="1.1" viewbox="0 0 16 16" width="16">
<path d="M1.75 0A1.75 1.75 0 000 1.75v12.5C0 15.216.784 16 1.75 16h12.5A1.75 1.75 0 0016
 14.25V1.75A1.75 1.75 0 0014.25 0H1.75zM1.5 1.75a.25.25 0 01.25-.25h12.5a.25.25 0 01.25.
25v12.5a.25.25 0 01-.25.25H1.75a.25.25 0 01-.25-.25V1.75zM11.75 3a.75.75 0 00-.75.75v7.5
a.75.75 0 001.5 0v-7.5a.75.75 0 00-.75-.75zm-8.25.75a.75.75 0 011.5 0v5.5a.75.75 0 01-1.
5 0v-5.5zM8 3a.75.75 0 00-.75.75v3.5a.75.75 0 001.5 0v-3.5A.75.75 0 008 3z" fill-rule="e
venodd"></path>
</svg>
<svg aria-label="Search" class="octicon octicon-search js-jump-to-octicon-search d-none
 flex-shrink-0" data-view-component="true" height="16" role="img" title="Search" version
="1.1" viewbox="0 0 16 16" width="16">
<path d="M11.5 7a4.499 4.499 0 11-8.998 0A4.499 4.499 0 0111.5 7zm-.82 4.74a6 6 0 111.06
-1.06l3.04 3.04a.75.75 0 11-1.06 1.06l-3.04-3.04z" fill-rule="evenodd"></path>
</svg>
</div>
<img alt="" aria-label="Team" class="avatar mr-2 flex-shrink-0 js-jump-to-suggestion-ava
tar d-none" height="28" src="" width="28"/>
<div class="jump-to-suggestion-name js-jump-to-suggestion-name flex-auto overflow-hidden
 text-left no-wrap css-truncate css-truncate-target">
</div>
<div class="border rounded-2 flex-shrink-0 color-bg-subtle px-1 color-fg-muted ml-1 f6 d
-none js-jump-to-badge-search">
<span aria-label="in all of GitHub" class="js-jump-to-badge-search-text-default d-none">
        Search
```

```html
      </span>
<span aria-label="in all of GitHub" class="js-jump-to-badge-search-text-global d-none">
        All GitHub
      </span>
<span aria-hidden="true" class="d-inline-block ml-1 v-align-middle">↵</span>
</div>
<div aria-hidden="true" class="border rounded-2 flex-shrink-0 color-bg-subtle px-1 color
-fg-muted ml-1 f6 d-none d-on-nav-focus js-jump-to-badge-jump">
      Jump to
      <span class="d-inline-block ml-1 v-align-middle">↵</span>
</div>
</a>
</li>
<li class="d-flex flex-justify-start flex-items-center p-0 f5 navigation-item js-navigat
ion-item js-jump-to-global-search d-none" role="option">
<a class="no-underline d-flex flex-auto flex-items-center jump-to-suggestions-path js-ju
mp-to-suggestion-path js-navigation-open p-2" data-item-type="global_search" href="" tab
index="-1">
<div class="jump-to-octicon js-jump-to-octicon flex-shrink-0 mr-2 text-center d-none">
<svg aria-label="Repository" class="octicon octicon-repo js-jump-to-octicon-repo d-none
 flex-shrink-0" data-view-component="true" height="16" role="img" title="Repository" ver
sion="1.1" viewbox="0 0 16 16" width="16">
<path d="M2 2.5A2.5 2.5 0 014.5 0h8.75a.75.75 0 01.75.75v12.5a.75.75 0 01-.75.75h-2.5a.7
5.75 0 110-1.5h1.75v-2h-8a1 1 0 00-.714 1.7.75.75 0 01-1.072 1.05A2.495 2.495 0 012 11.5
v-9zm10.5-1V9h-8c-.356 0-.694.074-1 .208V2.5a1 1 0 011-1h8zM5 12.25v3.25a.25.25 0 00.4.2
l1.45-1.087a.25.25 0 01.3 0L8.6 15.7a.25.25 0 00.4-.2v-3.25a.25.25 0 00-.25-.25h-3.5a.2
5.25 0 00-.25.25z" fill-rule="evenodd"></path>
</svg>
<svg aria-label="Project" class="octicon octicon-project js-jump-to-octicon-project d-no
ne flex-shrink-0" data-view-component="true" height="16" role="img" title="Project" vers
ion="1.1" viewbox="0 0 16 16" width="16">
<path d="M1.75 0A1.75 1.75 0 000 1.75v12.5C0 15.216.784 16 1.75 16h12.5A1.75 1.75 0 0016
 14.25V1.75A1.75 1.75 0 0014.25 0H1.75zM1.5 1.75a.25.25 0 01.25-.25h12.5a.25.25 0 01.25.
25v12.5a.25.25 0 01-.25.25H1.75a.25.25 0 01-.25-.25V1.75zM11.75 3a.75.75 0 00-.75.75v7.5
a.75.75 0 001.5 0v-7.5a.75.75 0 00-.75-.75zm-8.25.75a.75.75 0 011.5 0v5.5a.75.75 0 01-1.
5 0v-5.5zM8 3a.75.75 0 00-.75.75v3.5a.75.75 0 001.5 0v-3.5A.75.75 0 008 3z" fill-rule="e
venodd"></path>
</svg>
<svg aria-label="Search" class="octicon octicon-search js-jump-to-octicon-search d-none
 flex-shrink-0" data-view-component="true" height="16" role="img" title="Search" version
="1.1" viewbox="0 0 16 16" width="16">
<path d="M11.5 7a4.499 4.499 0 11-8.998 0A4.499 4.499 0 0111.5 7zm-.82 4.74a6 6 0 111.06
-1.06l3.04 3.04a.75.75 0 11-1.06 1.06l-3.04-3.04z" fill-rule="evenodd"></path>
</svg>
</div>
<img alt="" aria-label="Team" class="avatar mr-2 flex-shrink-0 js-jump-to-suggestion-ava
tar d-none" height="28" src="" width="28"/>
<div class="jump-to-suggestion-name js-jump-to-suggestion-name flex-auto overflow-hidden
 text-left no-wrap css-truncate css-truncate-target">
</div>
<div class="border rounded-2 flex-shrink-0 color-bg-subtle px-1 color-fg-muted ml-1 f6 d
-none js-jump-to-badge-search">
<span aria-label="in this topic" class="js-jump-to-badge-search-text-default d-none">
        In this topic
      </span>
<span aria-label="in all of GitHub" class="js-jump-to-badge-search-text-global d-none">
        All GitHub
      </span>
<span aria-hidden="true" class="d-inline-block ml-1 v-align-middle">↵</span>
</div>
<div aria-hidden="true" class="border rounded-2 flex-shrink-0 color-bg-subtle px-1 color
-fg-muted ml-1 f6 d-none d-on-nav-focus js-jump-to-badge-jump">
      Jump to
      <span class="d-inline-block ml-1 v-align-middle">↵</span>
</div>
</a>
```

```
</li>
</ul>
</div>
</input></label>
</form> </div>
</div>
</div>
<div class="position-relative mr-3 mb-4 mb-lg-0 d-inline-block">
<a class="HeaderMenu-link flex-shrink-0 no-underline" data-ga-click="(Logged out) Heade
r, clicked Sign in, text:sign-in" data-hydro-click='{"event_type":"authentication.clic
k","payload":{"location_in_page":"site header menu","repository_id":null,"auth_type":"SI
GN_UP","originating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-cli
ck-hmac="54a43cd551e8f9dca797503a36b41ef2cead0b370275f230403f19b37b01254c" href="/login?
return_to=https%3A%2F%2Fgithub.com%2Ftopics%2F3d">
            Sign in
          </a>
</div>
<a class="HeaderMenu-link flex-shrink-0 d-inline-block no-underline border color-border-
default rounded px-2 py-1" data-analytics-event='{"category":"Sign up","action":"click t
o sign up for account","label":"ref_page:/topics/3d;ref_cta:Sign up;ref_loc:header logge
d out"}' data-hydro-click='{"event_type":"authentication.click","payload":{"location_in_
page":"site header menu","repository_id":null,"auth_type":"SIGN_UP","originating_url":"h
ttps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="54a43cd551e8f9dca7
97503a36b41ef2cead0b370275f230403f19b37b01254c" href="/signup?ref_cta=Sign+up&amp;ref_lo
c=header+logged+out&amp;ref_page=%2Ftopics%2F3d&amp;source=header">
            Sign up
          </a>
</div>
</div>
</div>
</header>
</div>
<div class="show-on-focus" id="start-of-content"></div>
<div data-pjax-replace="" data-turbo-replace="" id="js-flash-container">
<template class="js-flash-template">
<div class="flash flash-full {{ className }}">
<div class="px-2">
<button aria-label="Dismiss this message" class="flash-close js-flash-close" type="butto
n">
<svg aria-hidden="true" class="octicon octicon-x" data-view-component="true" height="16"
 version="1.1" viewbox="0 0 16 16" width="16">
<path d="M3.72 3.72a.75.75 0 011.06 0L8 6.94l3.22-3.22a.75.75 0 111.06 1.06L9.06 8l3.22
 3.22a.75.75 0 11-1.06 1.06L8 9.06l-3.22 3.22a.75.75 0 01-1.06-1.06L6.94 8 3.72 4.78a.7
5.75 0 010-1.06z" fill-rule="evenodd"></path>
</svg>
</button>
<div>{{ message }}</div>
</div>
</div>
</template>
</div>
<include-fragment class="js-notification-shelf-include-fragment" data-base-src="https://
github.com/notifications/beta/shelf"></include-fragment>
<div class="application-main" data-commit-hovercards-enabled="" data-discussion-hovercar
ds-enabled="" data-issue-and-pr-hovercards-enabled="">
<main data-pjax-container="" id="js-pjax-container">
<div class="site-subnav color-bg-default site-subnav-sticky js-sticky">
<nav aria-label="Explore navigation" class="container-lg mx-auto p-responsive" role="nav
igation">
<div class="d-flex flex-wrap flex-items-center flex-justify-center flex-md-justify-start
 text-center text-md-left">
<a class="js-selected-navigation-item d-inline-block subnav-primary f5 py-0 py-md-3 mt-2
 mt-md-0 mr-0 mr-md-4 no-underline subnav-link" data-ga-click="Explore, go to explore, l
ocation:explore nav" data-hydro-click='{"event_type":"explore.click","payload":{"click_c
ontext":"NAVIGATION_BAR","click_target":"EXPLORE","click_visual_representation":"CLICK_V
ISUAL_REPRESENTATION_UNKNOWN","actor_id":null,"record_id":null,"originating_url":"http
```

```
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="9547d9c55a7568a967a56
bec9f65d312319d069478f7d19274af211733b9ea5c" data-selected-links="/explore /explore/emai
l /explore" href="/explore">Explore</a>
<a aria-current="page" class="js-selected-navigation-item selected d-inline-block py-2 p
y-md-3 mr-3 mr-md-4 no-underline subnav-link" data-ga-click="Explore, go to topics, loca
tion:explore nav" data-hydro-click='{"event_type":"explore.click","payload":{"click_cont
ext":"NAVIGATION_BAR","click_target":"TOPICS","click_visual_representation":"CLICK_VISUA
L_REPRESENTATION_UNKNOWN","actor_id":null,"record_id":null,"originating_url":"https://gi
thub.com/topics/3d","user_id":null}}' data-hydro-click-hmac="0ea57f9f171eaee1e7cc3b30ae5
0123a12090b693f3d6e5a55350bc679b176fc" data-selected-links="topics_path /topics/3d /topi
cs" href="/topics">Topics</a>
<a class="js-selected-navigation-item d-inline-block py-2 py-md-3 mr-3 mr-md-4 no-underl
ine subnav-link" data-ga-click="Explore, go to trending, location:explore nav" data-hydr
o-click='{"event_type":"explore.click","payload":{"click_context":"NAVIGATION_BAR","clic
k_target":"TRENDING","click_visual_representation":"CLICK_VISUAL_REPRESENTATION_UNKNOW
N","actor_id":null,"record_id":null,"originating_url":"https://github.com/topics/3d","us
er_id":null}}' data-hydro-click-hmac="03541b847e7677111febc61caebdc63a13e75616e8c0917d7e
c245f3fa993308" data-selected-links="/trending /trending/developers /trending/developers
 /trending /trending" href="/trending">Trending</a>
<a class="js-selected-navigation-item d-inline-block py-2 py-md-3 mr-3 mr-md-4 no-underl
ine subnav-link" data-ga-click="Explore, go to collections, location:explore nav" data-h
ydro-click='{"event_type":"explore.click","payload":{"click_context":"NAVIGATION_BAR","c
lick_target":"COLLECTIONS","click_visual_representation":"CLICK_VISUAL_REPRESENTATION_UN
KNOWN","actor_id":null,"record_id":null,"originating_url":"https://github.com/topics/3
d","user_id":null}}' data-hydro-click-hmac="efcfe300dfe4bbb4ade038a89e96cc1f748706dea488
677a2e4decabc532ba60" data-selected-links="collections_path /collections/ /collections"
 href="/collections">Collections</a>
<a class="js-selected-navigation-item d-inline-block py-2 py-md-3 mr-3 mr-md-4 no-underl
ine subnav-link" data-ga-click="Explore, go to events, location:explore nav" data-hydro-
click='{"event_type":"explore.click","payload":{"click_context":"NAVIGATION_BAR","click_
target":"EVENTS","click_visual_representation":"CLICK_VISUAL_REPRESENTATION_UNKNOWN","ac
tor_id":null,"record_id":null,"originating_url":"https://github.com/topics/3d","user_i
d":null}}' data-hydro-click-hmac="377157ffcdbc204f4b3472097201ba021a9dc98877c6f87b00aaa4
cd2fc73de0" data-selected-links="events_path /events/ /events" href="/events">Events</a>
<a class="js-selected-navigation-item d-inline-block py-2 py-md-3 mr-3 mr-md-4 no-underl
ine subnav-link" data-ga-click="Explore, go to Sponsors, location:explore nav" data-hydr
o-click='{"event_type":"explore.click","payload":{"click_context":"NAVIGATION_BAR","clic
k_target":"GITHUB_SPONSORS","click_visual_representation":"CLICK_VISUAL_REPRESENTATION_U
NKNOWN","actor_id":null,"record_id":null,"originating_url":"https://github.com/topics/3
d","user_id":null}}' data-hydro-click-hmac="a4023f83167e07c98f3614981fd6cc5f65ea4e7ff139
3242ca33485503157c17" data-selected-links="sponsors_explore_index_path /sponsors/explore
 /sponsors/explore" href="/sponsors/explore">GitHub Sponsors</a>
<div class="d-none d-md-block flex-auto text-right">
<a class="btn px-3 py-2" data-ga-click="Explore, change email updates, location:explore
 nav" data-hydro-click='{"event_type":"explore.click","payload":{"click_context":"NAVIGA
TION_BAR","click_target":"EXPLORE_EMAIL","click_visual_representation":"GET_EMAIL_UPDATE
S_BUTTON","actor_id":null,"record_id":null,"originating_url":"https://github.com/topics/
3d","user_id":null}}' data-hydro-click-hmac="3a07fdf474b81498857142a5afa0671ad4c7a3843d4
af4e59d6e03ec9fd1d359" data-view-component="true" href="/explore/email">
            Get email updates
</a> </div>
</div>
</nav>
</div>
<div>
<div class="container-lg d-sm-flex flex-items-center p-responsive py-5">
<div class="col-sm-10 d-flex flex-items-center mb-3 mb-sm-0">
<div class="border color-border-subtle color-bg-accent f4 color-fg-muted text-bold round
ed flex-shrink-0 text-center mr-3" style="width: 48px; height: 48; line-height: 48px;">
     #
   </div>
<h1 class="h1">
     3D
   </h1>
</div>
<div class="col-sm-2 text-sm-right">
```

```html
<div class="d-block" data-view-component="true">
<a aria-label="You must be signed in to star a repository" class="tooltipped tooltipped-
s btn-sm btn" data-hydro-click='{"event_type":"authentication.click","payload":{"locatio
n_in_page":"star button","repository_id":null,"auth_type":"LOG_IN","originating_url":"ht
tps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="3535ba29d95e20d1984
f681cee0925a581b62a9816a0303af07e7b761defc7c1" data-view-component="true" href="/login?r
eturn_to=%2Ftopic.3d" rel="nofollow"> <svg aria-hidden="true" class="octicon octicon-sta
r v-align-text-bottom d-inline-block mr-2" data-view-component="true" height="16" versio
n="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 .25a.75.75 0 01.673.418l1.882 3.815 4.21.612a.75.75 0 01.416 1.279l-3.046 2.
97.719 4.192a.75.75 0 01-1.088.791L8 12.347l-3.766 1.98a.75.75 0 01-1.088-.79l.72-4.194
L.818 6.374a.75.75 0 01.416-1.28l4.21-.611L7.327.668A.75.75 0 018 .25zm0 2.445L6.615 5.5
a.75.75 0 01-.564.41l-3.097.45 2.24 2.184a.75.75 0 01.216.664l-.528 3.084 2.769-1.456a.7
5.75 0 01.698 0l2.77 1.456-.53-3.084a.75.75 0 01.216-.664l2.24-2.183-3.096-.45a.75.75 0
01-.564-.41L8 2.694v.001z" fill-rule="evenodd"></path>
</svg><span class="d-inline" data-view-component="true">
            Star
</span>
</a></div>
</div>
</div>
<div class="topic p-responsive container-lg">
<div class="d-md-flex gutter-md">
<div class="col-md-8 col-lg-9" data-hpc="">
<div class="border rounded color-shadow-small color-bg-default p-4 mb-5">
<div class="markdown-body f5 mb-2">
<p>3D modeling uses specialized software to create a digital model of a physical object.
 It is an aspect of 3D computer graphics, used for video games, 3D printing, and VR, amo
ng other applications.</p>
</div>
</div>
<h2 class="h3 color-fg-muted">
            Here are
            5,759 public repositories
            matching this topic...
        </h2>
<div class="d-sm-flex">
<details class="details-reset details-overlay mt-2 mr-3 select-menu">
<summary class="select-menu-button btn-sm btn" data-view-component="true"> <i>Language:
</i>
<span data-menu-button="">All</span>
</summary> <details-menu class="select-menu-modal position-absolute" style="z-index: 9
9;">
<div class="select-menu-header">
<span class="select-menu-title">Filter by language</span>
</div>
<div class="select-menu-list">
<a aria-checked="true" class="select-menu-item" href="https://github.com/topics/3d" role
="menuitemradio">
<svg aria-hidden="true" class="octicon octicon-check select-menu-item-icon" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M13.78 4.22a.75.75 0 010 1.06l-7.25 7.25a.75.75 0 01-1.06 0L2.22 9.28a.75.75 0
011.06-1.06L6 10.94l6.72-6.72a.75.75 0 011.06 0z" fill-rule="evenodd"></path>
</svg>
<span class="select-menu-item-text d-flex flex-justify-between" data-menu-button-text
="">
                    All
                    <span>5,759</span>
</span>
</a> <a aria-checked="false" class="select-menu-item" href="https://github.com/topics/3
d?l=javascript" role="menuitemradio">
<svg aria-hidden="true" class="octicon octicon-check select-menu-item-icon" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M13.78 4.22a.75.75 0 010 1.06l-7.25 7.25a.75.75 0 01-1.06 0L2.22 9.28a.75.75 0
011.06-1.06L6 10.94l6.72-6.72a.75.75 0 011.06 0z" fill-rule="evenodd"></path>
</svg>
```

```html
<span class="select-menu-item-text d-flex flex-justify-between" data-menu-button-text
="">
                            JavaScript
                            <span>1,128</span>
</span>
</a> <a aria-checked="false" class="select-menu-item" href="https://github.com/topics/3
d?l=c%2B%2B" role="menuitemradio">
<svg aria-hidden="true" class="octicon octicon-check select-menu-item-icon" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M13.78 4.22a.75.75 0 010 1.06l-7.25 7.25a.75.75 0 01-1.06 0L2.22 9.28a.75.75 0
 011.06-1.06L6 10.94l6.72-6.72a.75.75 0 011.06 0z" fill-rule="evenodd"></path>
</svg>
<span class="select-menu-item-text d-flex flex-justify-between" data-menu-button-text
="">
                            C++
                            <span>809</span>
</span>
</a> <a aria-checked="false" class="select-menu-item" href="https://github.com/topics/3
d?l=python" role="menuitemradio">
<svg aria-hidden="true" class="octicon octicon-check select-menu-item-icon" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M13.78 4.22a.75.75 0 010 1.06l-7.25 7.25a.75.75 0 01-1.06 0L2.22 9.28a.75.75 0
 011.06-1.06L6 10.94l6.72-6.72a.75.75 0 011.06 0z" fill-rule="evenodd"></path>
</svg>
<span class="select-menu-item-text d-flex flex-justify-between" data-menu-button-text
="">
                            Python
                            <span>666</span>
</span>
</a> <a aria-checked="false" class="select-menu-item" href="https://github.com/topics/3
d?l=c%23" role="menuitemradio">
<svg aria-hidden="true" class="octicon octicon-check select-menu-item-icon" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M13.78 4.22a.75.75 0 010 1.06l-7.25 7.25a.75.75 0 01-1.06 0L2.22 9.28a.75.75 0
 011.06-1.06L6 10.94l6.72-6.72a.75.75 0 011.06 0z" fill-rule="evenodd"></path>
</svg>
<span class="select-menu-item-text d-flex flex-justify-between" data-menu-button-text
="">
                            C#
                            <span>531</span>
</span>
</a> <a aria-checked="false" class="select-menu-item" href="https://github.com/topics/3
d?l=c" role="menuitemradio">
<svg aria-hidden="true" class="octicon octicon-check select-menu-item-icon" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M13.78 4.22a.75.75 0 010 1.06l-7.25 7.25a.75.75 0 01-1.06 0L2.22 9.28a.75.75 0
 011.06-1.06L6 10.94l6.72-6.72a.75.75 0 011.06 0z" fill-rule="evenodd"></path>
</svg>
<span class="select-menu-item-text d-flex flex-justify-between" data-menu-button-text
="">
                            C
                            <span>298</span>
</span>
</a> <a aria-checked="false" class="select-menu-item" href="https://github.com/topics/3
d?l=typescript" role="menuitemradio">
<svg aria-hidden="true" class="octicon octicon-check select-menu-item-icon" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M13.78 4.22a.75.75 0 010 1.06l-7.25 7.25a.75.75 0 01-1.06 0L2.22 9.28a.75.75 0
 011.06-1.06L6 10.94l6.72-6.72a.75.75 0 011.06 0z" fill-rule="evenodd"></path>
</svg>
<span class="select-menu-item-text d-flex flex-justify-between" data-menu-button-text
="">
                            TypeScript
                            <span>279</span>
</span>
</a> <a aria-checked="false" class="select-menu-item" href="https://github.com/topics/3
```

```
d?l=html" role="menuitemradio">
<svg aria-hidden="true" class="octicon octicon-check select-menu-item-icon" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M13.78 4.22a.75.75 0 010 1.06l-7.25 7.25a.75.75 0 01-1.06 0L2.22 9.28a.75.75 0
 011.06-1.06L6 10.94l6.72-6.72a.75.75 0 011.06 0z" fill-rule="evenodd"></path>
</svg>
<span class="select-menu-item-text d-flex flex-justify-between" data-menu-button-text
="">
                         HTML
                         <span>236</span>
</span>
</a> <a aria-checked="false" class="select-menu-item" href="https://github.com/topics/3
d?l=java" role="menuitemradio">
<svg aria-hidden="true" class="octicon octicon-check select-menu-item-icon" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M13.78 4.22a.75.75 0 010 1.06l-7.25 7.25a.75.75 0 01-1.06 0L2.22 9.28a.75.75 0
 011.06-1.06L6 10.94l6.72-6.72a.75.75 0 011.06 0z" fill-rule="evenodd"></path>
</svg>
<span class="select-menu-item-text d-flex flex-justify-between" data-menu-button-text
="">
                         Java
                         <span>222</span>
</span>
</a> <a aria-checked="false" class="select-menu-item" href="https://github.com/topics/3
d?l=css" role="menuitemradio">
<svg aria-hidden="true" class="octicon octicon-check select-menu-item-icon" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M13.78 4.22a.75.75 0 010 1.06l-7.25 7.25a.75.75 0 01-1.06 0L2.22 9.28a.75.75 0
 011.06-1.06L6 10.94l6.72-6.72a.75.75 0 011.06 0z" fill-rule="evenodd"></path>
</svg>
<span class="select-menu-item-text d-flex flex-justify-between" data-menu-button-text
="">
                         CSS
                         <span>104</span>
</span>
</a> <a aria-checked="false" class="select-menu-item" href="https://github.com/topics/3
d?l=rust" role="menuitemradio">
<svg aria-hidden="true" class="octicon octicon-check select-menu-item-icon" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M13.78 4.22a.75.75 0 010 1.06l-7.25 7.25a.75.75 0 01-1.06 0L2.22 9.28a.75.75 0
 011.06-1.06L6 10.94l6.72-6.72a.75.75 0 011.06 0z" fill-rule="evenodd"></path>
</svg>
<span class="select-menu-item-text d-flex flex-justify-between" data-menu-button-text
="">
                         Rust
                         <span>104</span>
</span>
</a> </div>
</details-menu>
</details>
<details class="details-reset details-overlay select-menu mt-2">
<summary class="select-menu-button btn-sm btn" data-view-component="true"> <i>Sort:</i>
<span data-menu-button="">Best match</span>
</summary> <details-menu class="select-menu-modal position-absolute" style="z-index: 9
9;">
<div class="select-menu-header">
<span class="select-menu-title">Sort options</span>
</div>
<div class="select-menu-list">
<a aria-checked="true" class="select-menu-item" href="/topics/3d?o=desc&amp;s=" role="me
nuitemradio">
<svg aria-hidden="true" class="octicon octicon-check select-menu-item-icon" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M13.78 4.22a.75.75 0 010 1.06l-7.25 7.25a.75.75 0 01-1.06 0L2.22 9.28a.75.75 0
 011.06-1.06L6 10.94l6.72-6.72a.75.75 0 011.06 0z" fill-rule="evenodd"></path>
</svg>
```

```html
<span class="select-menu-item-text" data-menu-button-text="">
                                Best match
                                </span>
</a> <a aria-checked="false" class="select-menu-item" href="/topics/3d?o=desc&amp;s=star
s" role="menuitemradio">
<svg aria-hidden="true" class="octicon octicon-check select-menu-item-icon" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M13.78 4.22a.75.75 0 010 1.06l-7.25 7.25a.75.75 0 01-1.06 0L2.22 9.28a.75.75 0
 011.06-1.06L6 10.94l6.72-6.72a.75.75 0 011.06 0z" fill-rule="evenodd"></path>
</svg>
<span class="select-menu-item-text" data-menu-button-text="">
                                Most stars
                                </span>
</a> <a aria-checked="false" class="select-menu-item" href="/topics/3d?o=asc&amp;s=star
s" role="menuitemradio">
<svg aria-hidden="true" class="octicon octicon-check select-menu-item-icon" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M13.78 4.22a.75.75 0 010 1.06l-7.25 7.25a.75.75 0 01-1.06 0L2.22 9.28a.75.75 0
 011.06-1.06L6 10.94l6.72-6.72a.75.75 0 011.06 0z" fill-rule="evenodd"></path>
</svg>
<span class="select-menu-item-text" data-menu-button-text="">
                                Fewest stars
                                </span>
</a> <a aria-checked="false" class="select-menu-item" href="/topics/3d?o=desc&amp;s=fork
s" role="menuitemradio">
<svg aria-hidden="true" class="octicon octicon-check select-menu-item-icon" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M13.78 4.22a.75.75 0 010 1.06l-7.25 7.25a.75.75 0 01-1.06 0L2.22 9.28a.75.75 0
 011.06-1.06L6 10.94l6.72-6.72a.75.75 0 011.06 0z" fill-rule="evenodd"></path>
</svg>
<span class="select-menu-item-text" data-menu-button-text="">
                                Most forks
                                </span>
</a> <a aria-checked="false" class="select-menu-item" href="/topics/3d?o=asc&amp;s=fork
s" role="menuitemradio">
<svg aria-hidden="true" class="octicon octicon-check select-menu-item-icon" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M13.78 4.22a.75.75 0 010 1.06l-7.25 7.25a.75.75 0 01-1.06 0L2.22 9.28a.75.75 0
 011.06-1.06L6 10.94l6.72-6.72a.75.75 0 011.06 0z" fill-rule="evenodd"></path>
</svg>
<span class="select-menu-item-text" data-menu-button-text="">
                                Fewest forks
                                </span>
</a> <a aria-checked="false" class="select-menu-item" href="/topics/3d?o=desc&amp;s=upda
ted" role="menuitemradio">
<svg aria-hidden="true" class="octicon octicon-check select-menu-item-icon" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M13.78 4.22a.75.75 0 010 1.06l-7.25 7.25a.75.75 0 01-1.06 0L2.22 9.28a.75.75 0
 011.06-1.06L6 10.94l6.72-6.72a.75.75 0 011.06 0z" fill-rule="evenodd"></path>
</svg>
<span class="select-menu-item-text" data-menu-button-text="">
                                Recently updated
                                </span>
</a> <a aria-checked="false" class="select-menu-item" href="/topics/3d?o=asc&amp;s=updat
ed" role="menuitemradio">
<svg aria-hidden="true" class="octicon octicon-check select-menu-item-icon" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M13.78 4.22a.75.75 0 010 1.06l-7.25 7.25a.75.75 0 01-1.06 0L2.22 9.28a.75.75 0
 011.06-1.06L6 10.94l6.72-6.72a.75.75 0 011.06 0z" fill-rule="evenodd"></path>
</svg>
<span class="select-menu-item-text" data-menu-button-text="">
                                Least recently updated
                                </span>
</a> </div>
</details-menu>
</details>
```

```html
</div>
<article class="border rounded color-shadow-small color-bg-subtle my-4">
<a class="overflow-hidden flex-items-center rounded-top-2 color-border-muted border-bott
om d-flex position-relative" data-hydro-click='{"event_type":"explore.click","payload":
{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY","click_visual_representat
ion":"REPOSITORY_IMAGE","actor_id":null,"record_id":576201,"originating_url":"https://gi
thub.com/topics/3d","user_id":null}}' data-hydro-click-hmac="4d35331fe0d41fe0f2af831aff9
ef10f06bca2ade29df5c58fe82a8022d899b5" data-turbo="false" data-view-component="true" hre
f="/mrdoob/three.js" style="max-height:275px">
<img alt="three.js" class="d-block width-full" loading="lazy" src="https://repository-im
ages.githubusercontent.com/576201/6c52fa00-6238-11eb-8763-f36f6e226bba"/>
</a>
<div class="px-3">
<div class="d-flex flex-justify-between my-3">
<div class="d-flex flex-auto">
<span style="margin-top:2px">
<svg aria-hidden="true" class="octicon octicon-repo color-fg-muted mr-2" data-view-compo
nent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M2 2.5A2.5 2.5 0 014.5 0h8.75a.75.75 0 01.75.75v12.5a.75.75 0 01-.75.75h-2.5a.7
5.75 0 110-1.5h1.75v-2h-8a1 1 0 00-.714 1.7.75.75 0 01-1.072 1.05A2.495 2.495 0 012 11.5
v-9zm10.5-1V9h-8c-.356 0-.694.074-1 .208V2.5a1 1 0 011-1h8zM5 12.25v3.25a.25.25 0 00.4.2
l1.45-1.087a.25.25 0 01.3 0L8.6 15.7a.25.25 0 00.4-.2v-3.25a.25.25 0 00-.25-.25h-3.5a.2
5.25 0 00-.25.25z" fill-rule="evenodd"></path>
</svg>
</span>
<h3 class="f3 color-fg-muted text-normal lh-condensed">
<a data-hydro-click='{"event_type":"explore.click","payload":{"click_context":"REPOSITOR
Y_CARD","click_target":"OWNER","click_visual_representation":"REPOSITORY_OWNER_HEADIN
G","actor_id":null,"record_id":97088,"originating_url":"https://github.com/topics/3d","u
ser_id":null}}' data-hydro-click-hmac="4bdbc49d3c05ae7f70b531fbce709a384200b0768554e0172
950286a8db30940" data-turbo="false" data-view-component="true" href="/mrdoob">
            mrdoob
</a>          /
          <a class="text-bold wb-break-word" data-hydro-click='{"event_type":"explore.cl
ick","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY","click_vis
ual_representation":"REPOSITORY_NAME_HEADING","actor_id":null,"record_id":576201,"origin
ating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="517d3
d5cb9d89752156923904a4238816bc9b51ab7772f3e3644ce897d8dd4e5" data-turbo="false" data-vie
w-component="true" href="/mrdoob/three.js">
            three.js
</a> </h3>
</div>
<div class="d-flex flex-items-center ml-3">
<a aria-label="Sponsor @mrdoob" class="btn btn-sm mr-2" data-hydro-click='{"event_typ
e":"sponsors.button_click","payload":{"button":"TOPIC_PAGE_SPONSOR","sponsorable_logi
n":"mrdoob","originating_url":"https://github.com/topics/3d","user_id":null}}' data-hydr
o-click-hmac="0426c5b1d00643f42d8cec677f8189072cd84b2e68505debb1deb846cbbabe0d" data-vie
w-component="true" href="/sponsors/mrdoob">
<svg aria-hidden="true" class="octicon octicon-heart icon-sponsor mr-1 v-align-middle co
lor-fg-sponsors anim-pulse-in" data-view-component="true" height="16" version="1.1" view
box="0 0 16 16" width="16">
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5 0 008 13.393a20.561 20.561 0 003.135-2.211C12.92 9.644 14.5 7.65 14.5 5.5c0-1.836-1.41
4-3-2.75-3-1.373 0-2.609.986-3.029 2.456a.75.75 0 01-1.442 0C6.859 3.486 5.623 2.5 4.25
 2.5zM8 14.25l-.345.666-.002-.001-.006-.003-.018-.01a7.643 7.643 0 01-.31-.17 22.075 22.
075 0 01-3.434-2.414C2.045 10.731 0 8.35 0 5.5 0 2.836 2.086 1 4.25 1 5.797 1 7.153 1.80
2 8 3.02 8.847 1.802 10.203 1 11.75 1 13.914 1 16 2.836 16 5.5c0 2.85-2.045 5.231-3.885
 6.818a22.08 22.08 0 01-3.744 2.584l-.018.01-.006.003h-.002L8 14.25zm0 0l.345.666a.752.7
52 0 01-.69 0L8 14.25z" fill-rule="evenodd"></path>
</svg>
<span class="v-align-middle">Sponsor</span>
</a>
<div class="BtnGroup d-flex" data-view-component="true">
<a aria-label="You must be signed in to star a repository" class="tooltipped tooltipped-
s btn-sm btn BtnGroup-item color-bg-default" data-hydro-click='{"event_type":"authentica
tion.click","payload":{"location_in_page":"star button","repository_id":576201,"auth_typ
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o-click-hmac="b901d0051f5d392e6990ed43be8259b46c6bc69b73fa228065a5b24cb7acf2cf" data-vie
w-component="true" href="/login?return_to=%2Fmrdoob%2Fthree.js" rel="nofollow"> <svg ari
a-hidden="true" class="octicon octicon-star v-align-text-bottom d-inline-block mr-2" dat
a-view-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 .25a.75.75 0 01.673.418l1.882 3.815 4.21.612a.75.75 0 01.416 1.279l-3.046 2.
97.719 4.192a.75.75 0 01-1.088.791L8 12.347l-3.766 1.98a.75.75 0 01-1.088-.79l.72-4.194
L.818 6.374a.75.75 0 01.416-1.28l4.21-.611L7.327.668A.75.75 0 018 .25zm0 2.445L6.615 5.5
a.75.75 0 01-.564.41l-3.097.45 2.24 2.184a.75.75 0 01.216.664l-.528 3.084 2.769-1.456a.7
5.75 0 01.698 0l2.77 1.456-.53-3.084a.75.75 0 01.216-.664l2.24-2.183-3.096-.45a.75.75 0
 01-.564-.41L8 2.694v.001z" fill-rule="evenodd"></path>
</svg>
          Star
 <span aria-label="84789 users starred this repository" class="Counter js-social-
count" data-pjax-replace="true" data-plural-suffix="users starred this repository" data-
singular-suffix="user starred this repository" data-turbo-replace="true" data-view-compo
nent="true" id="repo-stars-counter-star" title="84,789">84.8k
 <button aria-label="You must be signed in to add this repository to a list" class
="btn-sm btn BtnGroup-item px-2" data-view-component="true" disabled="disabled" type="bu
tton"> <svg aria-hidden="true" class="octicon octicon-triangle-down" data-view-component
="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.427 7.427l3.396 3.396a.25.25 0 00.354 0l3.396-3.396A.25.25 0 0011.396 7H4.60
4a.25.25 0 00-.177.427z"></path>
</svg>
</button></div>
</div>
</div>
</div>
<nav aria-label="Repository menu" class="tabnav px-3 mb-0" data-view-component="true">
<ul class="tabnav-tabs" data-view-component="true">
<li class="d-inline-flex" data-view-component="true">
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ting_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="96d141
d07f5ef2635557596f0c18e5c22681ab2a3b4458bb89d001cfc80e2723" data-turbo="false" data-view
-component="true" href="/mrdoob/three.js" id="code-tab-576201">
<svg aria-hidden="true" class="octicon octicon-code color-fg-default" data-view-componen
t="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.72 3.22a.75.75 0 011.06 1.06L2.06 8l3.72 3.72a.75.75 0 11-1.06 1.06L.47 8.53
a.75.75 0 010-1.06l4.25-4.25zm6.56 0a.75.75 0 10-1.06 1.06L13.94 8l-3.72 3.72a.75.75 0 1
01.06 1.06l4.25-4.25a.75.75 0 000-1.06l-4.25-4.25z" fill-rule="evenodd"></path>
</svg> Code

<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
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s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="b1f7acfe2c4051d57774c
6aee910258397a403009b1b71cdedffd2b16091f6ef" data-turbo="false" data-view-component="tru
e" href="/mrdoob/three.js/issues" id="issues-tab-576201">
<svg aria-hidden="true" class="octicon octicon-issue-opened color-fg-muted" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 9.5a1.5 1.5 0 100-3 1.5 1.5 0 000 3z"></path><path d="M8 0a8 8 0 100 16A8 8
 0 008 0zM1.5 8a6.5 6.5 0 1113 0 6.5 6.5 0 01-13 0z" fill-rule="evenodd"></path>
</svg> Issues

<li class="d-inline-flex" data-view-component="true">
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ing_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="5479008

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d97eb9d2b0ab08e81450199ca50e837afba0e3d392d838e32fcb28a7f" data-turbo="false" data-view-
component="true" href="/mrdoob/three.js/pulls" id="pull-requests-tab-576201">
<svg aria-hidden="true" class="octicon octicon-git-pull-request color-fg-muted" data-vie
w-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
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7a.25.25 0 010-.354zM3.75 2.5a.75.75 0 100 1.5.75.75 0 000-1.5zm-2.25.75a2.25 2.25 0 113
 2.122v5.256a2.251 2.251 0 11-1.5 0V5.372A2.25 2.25 0 011.5 3.25zM11 2.5h-1V4h1a1 1 0 01
1 1v5.628a2.251 2.251 0 101.5 0V5A2.5 2.5 0 0011 2.5zm1 10.25a.75.75 0 111.5 0 .75.75 0
 01-1.5 0zM3.75 12a.75.75 0 100 1.5.75.75 0 000-1.5z" fill-rule="evenodd"></path>
</svg> Pull requests



</a></li>
</ul>
</nav>
<div class="color-bg-default rounded-bottom-2">
<div class="px-3 pt-3">
<p class="color-fg-muted mb-0"><div>JavaScript 3D Library.</div></p>
</div>
<div class="d-flex flex-wrap border-bottom color-border-muted px-3 pt-2 pb-2">
<a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explore.cli
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presentation":"TOPIC_TAG","actor_id":null,"record_id":40,"originating_url":"https://gith
ub.com/topics/3d","user_id":null}}' data-hydro-click-hmac="8f9ebc678303a547c14f32e3d50c2
e68b385c6c6fd50d193abf2641fc57c5153" data-view-component="true" href="/topics/javascrip
t" title="Topic: javascript">
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</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="fd9948dfa424096696620
33df52c488e925d4f3d90c6fe8136f3e6020bb49ffe" data-view-component="true" href="/topics/sv
g" title="Topic: svg">
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</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="d2e607f9d7b25ee5a5f68
ce176febce6c2f1236e5bf9ca64fdb5da5a01a19767" data-view-component="true" href="/topics/we
bgl" title="Topic: webgl">
            webgl
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="01ad1ab6e219e5b4b6f09
e782220dff67dcccfb0d0e752daff6a8ed79ebc8a20" data-view-component="true" href="/topics/ht
ml5" title="Topic: html5">
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s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="0694e7e822f74b8a606df
97d0cb6572a660b366fa0697b2001a01371c72f3bd2" data-view-component="true" href="/topics/ca
nvas" title="Topic: canvas">
            canvas
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="745d51d5127d96956634d
d70fd148c84d9aff6b0c48d0bea18c8fd880ce6d44c" data-view-component="true" href="/topics/au
gmented-reality" title="Topic: augmented-reality">
            augmented-reality
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="927129dc1f55047771c17
```

```
1780cacedaf87358ae04349fb7513fe535114891375" data-view-component="true" href="/topics/we
baudio" title="Topic: webaudio">
              webaudio
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="ea85696e8aa0a67c81a14
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rtual-reality" title="Topic: virtual-reality">
              virtual-reality
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="cf61b63494249752f032
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ebgl2" title="Topic: webgl2">
              webgl2
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="028a08f740516273aa7f
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d" title="Topic: 3d">
              3d
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ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="395c436d2736ec9d5a79
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ebgpu" title="Topic: webgpu">
              webgpu
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":571668,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="8e774c5aba5347fe9bbf
c3b57e647cd08049698eee18b701801a0e351990b17f" data-view-component="true" href="/topics/w
ebxr" title="Topic: webxr">
              webxr
</a> </div>
<div class="p-3">
<ul class="d-flex f6 list-style-none color-fg-muted">
<li class="mr-4">
              Updated
              <relative-time class="no-wrap" datetime="2022-08-29T19:25:12Z">Aug 29, 2022
</relative-time>
</li>
<li class="mr-4">
<span class="f6 my-1 ml-0">
<span class="repo-language-color" style="background-color: #f1e05a"></span>
<span itemprop="programmingLanguage">JavaScript</span>
</span>
</li>
</ul>
</div>
</div>
</article>
<article class="border rounded color-shadow-small color-bg-subtle my-4">
<div class="px-3">
<div class="d-flex flex-justify-between my-3">
<div class="d-flex flex-auto">
<span style="margin-top:2px">
<svg aria-hidden="true" class="octicon octicon-repo color-fg-muted mr-2" data-view-compo
nent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M2 2.5A2.5 2.5 0 014.5 0h8.75a.75.75 0 01.75.75v12.5a.75.75 0 01-.75.75h-2.5a.7
5.75 0 110-1.5h1.75v-2h-8a1 1 0 00-.714 1.7.75.75 0 01-1.072 1.05A2.495 2.495 0 012 11.5
v-9zm10.5-1V9h-8c-.356 0-.694.074-1 .208V2.5a1 1 0 011-1h8zM5 12.25v3.25a.25.25 0 00.4.2
```

```
l1.45-1.087a.25.25 0 01.3 0L8.6 15.7a.25.25 0 00.4-.2v-3.25a.25.25 0 00-.25-.25h-3.5a.2
5.25 0 00-.25.25z" fill-rule="evenodd"></path>
</svg>
</span>
<h3 class="f3 color-fg-muted text-normal lh-condensed">
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Y_CARD","click_target":"OWNER","click_visual_representation":"REPOSITORY_OWNER_HEADIN
G","actor_id":null,"record_id":509841,"originating_url":"https://github.com/topics/3
d","user_id":null}}' data-hydro-click-hmac="760dcd7b253cb1a27d9b1a8675e86db885295be4e0d8
d9fa7397adf923075d36" data-turbo="false" data-view-component="true" href="/libgdx">
            libgdx
</a>            /
          <a class="text-bold wb-break-word" data-hydro-click='{"event_type":"explore.cl
ick","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY","click_vis
ual_representation":"REPOSITORY_NAME_HEADING","actor_id":null,"record_id":5373551,"origi
nating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="ff9d
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ew-component="true" href="/libgdx/libgdx">
            libgdx
</a> </h3>
</div>
<div class="d-flex flex-items-center ml-3">
<div class="BtnGroup d-flex" data-view-component="true">
<a aria-label="You must be signed in to star a repository" class="tooltipped tooltipped-
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tion.click","payload":{"location_in_page":"star button","repository_id":5373551,"auth_ty
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ew-component="true" href="/login?return_to=%2Flibgdx%2Flibgdx" rel="nofollow"> <svg aria
-hidden="true" class="octicon octicon-star v-align-text-bottom d-inline-block mr-2" data
-view-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
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97.719 4.192a.75.75 0 01-1.088.791L8 12.347l-3.766 1.98a.75.75 0 01-1.088-.79l.72-4.194
L.818 6.374a.75.75 0 01.416-1.28l4.21-.611L7.327.668A.75.75 0 018 .25zm0 2.445L6.615 5.5
a.75.75 0 01-.564.41l-3.097.45 2.24 2.184a.75.75 0 01.216.664l-.528 3.084 2.769-1.456a.7
5.75 0 01.698 0l2.77 1.456-.53-3.084a.75.75 0 01.216-.664l2.24-2.183-3.096-.45a.75.75 0
 01-.564-.41L8 2.694v.001z" fill-rule="evenodd"></path>
</svg><span class="d-inline" data-view-component="true">
            Star
</span> <span aria-label="20386 users starred this repository" class="Counter js-social-
count" data-pjax-replace="true" data-plural-suffix="users starred this repository" data-
singular-suffix="user starred this repository" data-turbo-replace="true" data-view-compo
nent="true" id="repo-stars-counter-star" title="20,386">20.4k</span>
</a> <button aria-label="You must be signed in to add this repository to a list" class
="btn-sm btn BtnGroup-item px-2" data-view-component="true" disabled="disabled" type="bu
tton"> <svg aria-hidden="true" class="octicon octicon-triangle-down" data-view-component
="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.427 7.427l3.396 3.396a.25.25 0 00.354 0l3.396-3.396A.25.25 0 0011.396 7H4.60
4a.25.25 0 00-.177.427z"></path>
</svg>
</button></div>
</div>
</div>
</div>
<nav aria-label="Repository menu" class="tabnav px-3 mb-0" data-view-component="true">
<ul class="tabnav-tabs" data-view-component="true">
<li class="d-inline-flex" data-view-component="true">
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ating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="9b2b1
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<svg aria-hidden="true" class="octicon octicon-code color-fg-default" data-view-componen
t="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.72 3.22a.75.75 0 011.06 1.06L2.06 8l3.72 3.72a.75.75 0 11-1.06 1.06L.47 8.53
```

```
a.75.75 0 010-1.06l4.25-4.25zm6.56 0a.75.75 0 10-1.06 1.06L13.94 8l-3.72 3.72a.75.75 0 1
01.06 1.06l4.25-4.25a.75.75 0 000-1.06l-4.25-4.25z" fill-rule="evenodd"></path>
</svg> Code


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
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ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="3dfb9c34636ea503669d
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ue" href="/libgdx/libgdx/issues" id="issues-tab-5373551">
<svg aria-hidden="true" class="octicon octicon-issue-opened color-fg-muted" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 9.5a1.5 1.5 0 100-3 1.5 1.5 0 000 3z"></path><path d="M8 0a8 8 0 100 16A8 8
 0 008 0zM1.5 8a6.5 6.5 0 1113 0 6.5 6.5 0 01-13 0z" fill-rule="evenodd"></path>
</svg> Issues


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_PULL_REQUESTS","click
_visual_representation":"PULL_REQUESTS_TAB","actor_id":null,"record_id":5373551,"origina
ting_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="d5ca5a
b1f5e5865a642e02cf8d5ee43fb1f611b12089cbb7c9984f8147d8a98d" data-turbo="false" data-view
-component="true" href="/libgdx/libgdx/pulls" id="pull-requests-tab-5373551">
<svg aria-hidden="true" class="octicon octicon-git-pull-request color-fg-muted" data-vie
w-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M7.177 3.073L9.573.677A.25.25 0 0110 .854v4.792a.25.25 0 01-.427.177L7.177 3.42
7a.25.25 0 010-.354zM3.75 2.5a.75.75 0 100 1.5.75.75 0 000-1.5zm-2.25.75a2.25 2.25 0 113
 2.122v5.256a2.251 2.251 0 11-1.5 0V5.372A2.25 2.25 0 011.5 3.25zM11 2.5h-1V4h1a1 1 0 01
1 1v5.628a2.251 2.251 0 101.5 0V5A2.5 2.5 0 0011 2.5zm1 10.25a.75.75 0 111.5 0 .75.75 0
 01-1.5 0zM3.75 12a.75.75 0 100 1.5.75.75 0 000-1.5z" fill-rule="evenodd"></path>
</svg> Pull requests


</a></li>
</ul>
</nav>
<div class="color-bg-default rounded-bottom-2">
<div class="px-3 pt-3">
<p class="color-fg-muted mb-0"><div>Desktop/Android/HTML5/iOS Java game development fram
ework</div></p>
</div>
<div class="d-flex flex-wrap border-bottom color-border-muted px-3 pt-2 pb-2">
<a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explore.cli
ck","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visual_re
presentation":"TOPIC_TAG","actor_id":null,"record_id":67,"originating_url":"https://gith
ub.com/topics/3d","user_id":null}}' data-hydro-click-hmac="79746627ead63b3a2eaa4453130c7
3c0833fd2abda86900c40786ff951b9d49a" data-view-component="true" href="/topics/android" t
itle="Topic: android">
            android
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":70,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="b28e67e2c0c88528359da
f69ae700878d160f1f82719fae9ec88e9502eb8e0a2" data-view-component="true" href="/topics/ga
me" title="Topic: game">
            game
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":160,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="be1faecbd5173268561e1
551dd8ce21cfb8c0335dc1b91f5280345c390bd331b" data-view-component="true" href="/topics/ja
```

va" title="Topic: java">
                java
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="4401c780d23c889b9c76f
45497f970453541d4a81d69592220d29292a9c84fe3" data-view-component="true" href="/topics/wi
ndows" title="Topic: windows">
                windows
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":200,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="bafae3445ec7531a94b91
fa467812f2418f9bfe23ec640e316c25bf4621e00e5" data-view-component="true" href="/topics/li
nux" title="Topic: linux">
                linux
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":743,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="5253cd08fef65ac6cd468
16e135caf72670da4439e602b3f4e970c5f32a4cb2d" data-view-component="true" href="/topics/io
s" title="Topic: ios">
                ios
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":7521,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="82f021eaa05596a49f171
c23b34d431056dc1a1ef0543029ee831a2ae52e0b2d" data-view-component="true" href="/topics/fr
amework" title="Topic: framework">
                framework
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":9045,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="01ad1ab6e219e5b4b6f09
e782220dff67dcccfb0d0e752daff6a8ed79ebc8a20" data-view-component="true" href="/topics/ht
ml5" title="Topic: html5">
                html5
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":9621,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="7c29f06812aaf75129d4e
43659117665235e057b4f8cb267bbfc5065c3209600" data-view-component="true" href="/topics/cr
oss-platform" title="Topic: cross-platform">
                cross-platform
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":12957,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="d5406c2726aea1d749571
22518f592e51d27ca61fb3ca2f256c94c41155db0c4" data-view-component="true" href="/topics/li
bgdx" title="Topic: libgdx">
                libgdx
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":60888,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="1260f0749d074b58b7d25
023c875c469a0be1647db5069d94ea229b801137fb2" data-view-component="true" href="/topics/ma
cosx" title="Topic: macosx">
                macosx
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":238400,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="028a08f740516273aa7f
05a2f5db3c450593017549ffa99920f497664d796dbe" data-view-component="true" href="/topics/3
d" title="Topic: 3d">
                3d
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor

```
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":248512,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="6608a741a5bb365111a1
89e4fb161b7be32438564f7eeade46e580e52d186a5c" data-view-component="true" href="/topics/2
d" title="Topic: 2d">
            2d
</a> </div>
<div class="p-3">
<ul class="d-flex f6 list-style-none color-fg-muted">
<li class="mr-4">
            Updated
            <relative-time class="no-wrap" datetime="2022-08-26T15:11:17Z">Aug 26, 2022
</relative-time>
</li>
<li class="mr-4">
<span class="f6 my-1 ml-0">
<span class="repo-language-color" style="background-color: #b07219"></span>
<span itemprop="programmingLanguage">Java</span>
</span>
</li>
</ul>
</div>
</div>
</article>
<article class="border rounded color-shadow-small color-bg-subtle my-4">
<div class="px-3">
<div class="d-flex flex-justify-between my-3">
<div class="d-flex flex-auto">
<span style="margin-top:2px">
<svg aria-hidden="true" class="octicon octicon-repo color-fg-muted mr-2" data-view-compo
nent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M2 2.5A2.5 2.5 0 014.5 0h8.75a.75.75 0 01.75.75v12.5a.75.75 0 01-.75.75h-2.5a.7
5.75 0 110-1.5h1.75v-2h-8a1 1 0 00-.714 1.7.75.75 0 01-1.072 1.05A2.495 2.495 0 012 11.5
v-9zm10.5-1V9h-8c-.356 0-.694.074-1 .208V2.5a1 1 0 011-1h8zM5 12.25v3.25a.25.25 0 00.4.2
l1.45-1.087a.25.25 0 01.3 0L8.6 15.7a.25.25 0 00.4-.2v-3.25a.25.25 0 00-.25-.25h-3.5a.2
5.25 0 00-.25.25z" fill-rule="evenodd"></path>
</svg>
</span>
<h3 class="f3 color-fg-muted text-normal lh-condensed">
<a data-hydro-click='{"event_type":"explore.click","payload":{"click_context":"REPOSITOR
Y_CARD","click_target":"OWNER","click_visual_representation":"REPOSITORY_OWNER_HEADIN
G","actor_id":null,"record_id":45790596,"originating_url":"https://github.com/topics/3
d","user_id":null}}' data-hydro-click-hmac="14658fab6217ec4ba70f16dd98006d4334793fae49cc
25ce2e1c0bb5a8950006" data-turbo="false" data-view-component="true" href="/pmndrs">
            pmndrs
</a>          /
        <a class="text-bold wb-break-word" data-hydro-click='{"event_type":"explore.cl
ick","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY","click_vis
ual_representation":"REPOSITORY_NAME_HEADING","actor_id":null,"record_id":172521926,"ori
ginating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="62
9be4efc1260d27fe29201a1901eb808cbf995e4a51d877282b7164242dbadf" data-turbo="false" data-
view-component="true" href="/pmndrs/react-three-fiber">
            react-three-fiber
</a> </h3>
</div>
<div class="d-flex flex-items-center ml-3">
<a aria-label="Sponsor @pmndrs" class="btn btn-sm mr-2" data-hydro-click='{"event_typ
e":"sponsors.button_click","payload":{"button":"TOPIC_PAGE_SPONSOR","sponsorable_logi
n":"pmndrs","originating_url":"https://github.com/topics/3d","user_id":null}}' data-hydr
o-click-hmac="a9d912f4e2bd4a5034a79bea00dfdfd45af92fdd45e1119b326a7e28321eeeb2" data-vie
w-component="true" href="/sponsors/pmndrs">
<svg aria-hidden="true" class="octicon octicon-heart icon-sponsor mr-1 v-align-middle co
lor-fg-sponsors anim-pulse-in" data-view-component="true" height="16" version="1.1" view
box="0 0 16 16" width="16">
<path d="M4.25 2.5c-1.336 0-2.75 1.164-2.75 3 0 2.15 1.58 4.144 3.365 5.682A20.565 20.56
5 0 008 13.393a20.561 20.561 0 003.135-2.211C12.92 9.644 14.5 7.65 14.5 5.5c0-1.836-1.41
```

```
4-3-2.75-3-1.373 0-2.609.986-3.029 2.456a.75.75 0 01-1.442 0C6.859 3.486 5.623 2.5 4.25
 2.5zM8 14.25l-.345.666-.002-.001-.006-.003-.018-.01a7.643 7.643 0 01-.31-.17 22.075 22.
075 0 01-3.434-2.414C2.045 10.731 0 8.35 0 5.5 0 2.836 2.086 1 4.25 1 5.797 1 7.153 1.80
2 8 3.02 8.847 1.802 10.203 1 11.75 1 13.914 1 16 2.836 16 5.5c0 2.85-2.045 5.231-3.885
 6.818a22.08 22.08 0 01-3.744 2.584l-.018.01-.006.003h-.002L8 14.25zm0 01.345.666a.752.7
52 0 01-.69 0L8 14.25z" fill-rule="evenodd"></path>
</svg>
<span class="v-align-middle">Sponsor</span>
</a>
<div class="BtnGroup d-flex" data-view-component="true">
<a aria-label="You must be signed in to star a repository" class="tooltipped tooltipped-
s btn-sm btn BtnGroup-item color-bg-default" data-hydro-click='{"event_type":"authentica
tion.click","payload":{"location_in_page":"star button","repository_id":172521926,"auth_
type":"LOG_IN","originating_url":"https://github.com/topics/3d","user_id":null}}' data-h
ydro-click-hmac="71b361da494f1b8716e6415addbe4f0a649f6b5a7a11807eca9315963170d1ee" data-
view-component="true" href="/login?return_to=%2Fpmndrs%2Freact-three-fiber" rel="nofollo
w"> <svg aria-hidden="true" class="octicon octicon-star v-align-text-bottom d-inline-blo
ck mr-2" data-view-component="true" height="16" version="1.1" viewbox="0 0 16 16" width
="16">
<path d="M8 .25a.75.75 0 01.673.418l1.882 3.815 4.21.612a.75.75 0 01.416 1.279l-3.046 2.
97.719 4.192a.75.75 0 01-1.088.791L8 12.347l-3.766 1.98a.75.75 0 01-1.088-.79l.72-4.194
L.818 6.374a.75.75 0 01.416-1.28l4.21-.611L7.327.668A.75.75 0 018 .25zm0 2.445L6.615 5.5
a.75.75 0 01-.564.41l-3.097.45 2.24 2.184a.75.75 0 01.216.664l-.528 3.084 2.769-1.456a.7
5.75 0 01.698 0l2.77 1.456-.53-3.084a.75.75 0 01.216-.664l2.24-2.183-3.096-.45a.75.75 0
 01-.564-.41L8 2.694v.001z" fill-rule="evenodd"></path>
</svg><span class="d-inline" data-view-component="true">
          Star
</span> <span aria-label="19280 users starred this repository" class="Counter js-social-
count" data-pjax-replace="true" data-plural-suffix="users starred this repository" data-
singular-suffix="user starred this repository" data-turbo-replace="true" data-view-compo
nent="true" id="repo-stars-counter-star" title="19,280">19.3k</span>
</a> <button aria-label="You must be signed in to add this repository to a list" class
="btn-sm btn BtnGroup-item px-2" data-view-component="true" disabled="disabled" type="bu
tton"> <svg aria-hidden="true" class="octicon octicon-triangle-down" data-view-component
="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.427 7.427l3.396 3.396a.25.25 0 00.354 0l3.396-3.396A.25.25 0 0011.396 7H4.60
4a.25.25 0 00-.177.427z"></path>
</svg>
</button></div>
</div>
</div>
</div>
<nav aria-label="Repository menu" class="tabnav px-3 mb-0" data-view-component="true">
<ul class="tabnav-tabs" data-view-component="true">
<li class="d-inline-flex" data-view-component="true">
<a aria-current="true" class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_typ
e":"explore.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITO
RY","click_visual_representation":"CODE_TAB","actor_id":null,"record_id":172521926,"orig
inating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="c20
3ac49000ad11ab2f38dea653b435072c01d1f070a6f45443393b5a4792afa" data-turbo="false" data-v
iew-component="true" href="/pmndrs/react-three-fiber" id="code-tab-172521926">
<svg aria-hidden="true" class="octicon octicon-code color-fg-default" data-view-componen
t="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.72 3.22a.75.75 0 011.06 1.06L2.06 8l3.72 3.72a.75.75 0 11-1.06 1.06L.47 8.53
a.75.75 0 010-1.06l4.25-4.25zm6.56 0a.75.75 0 10-1.06 1.06L13.94 8l-3.72 3.72a.75.75 0 1
01.06 1.06l4.25-4.25a.75.75 0 000-1.06l-4.25-4.25z" fill-rule="evenodd"></path>
</svg> Code


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_ISSUES","click_visual
_representation":"ISSUES_TAB","actor_id":null,"record_id":172521926,"originating_url":"h
ttps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="726bb4814d45355477
ec52b57ec5744b9bd1538988d609f13551a6139845684e" data-turbo="false" data-view-component
```

```html
="true" href="/pmndrs/react-three-fiber/issues" id="issues-tab-172521926">
<svg aria-hidden="true" class="octicon octicon-issue-opened color-fg-muted" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 9.5a1.5 1.5 0 100-3 1.5 1.5 0 000 3z"></path><path d="M8 0a8 8 0 100 16A8 8
 0 008 0zM1.5 8a6.5 6.5 0 1113 0 6.5 6.5 0 01-13 0z" fill-rule="evenodd"></path>
</svg> Issues


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_PULL_REQUESTS","click
_visual_representation":"PULL_REQUESTS_TAB","actor_id":null,"record_id":172521926,"origi
nating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="deac
ea3860a87f7a315543cd56a65fa1283ca6b51d0145b50601b01407c95b74" data-turbo="false" data-vi
ew-component="true" href="/pmndrs/react-three-fiber/pulls" id="pull-requests-tab-1725219
26">
<svg aria-hidden="true" class="octicon octicon-git-pull-request color-fg-muted" data-vie
w-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M7.177 3.073L9.573.677A.25.25 0 0110 .854v4.792a.25.25 0 01-.427.177L7.177 3.42
7a.25.25 0 010-.354zM3.75 2.5a.75.75 0 100 1.5.75.75 0 000-1.5zm-2.25.75a2.25 2.25 0 113
 2.122v5.256a2.251 2.251 0 11-1.5 0V5.372A2.25 2.25 0 011.5 3.25zM11 2.5h-1V4h1a1 1 0 01
1 1v5.628a2.251 2.251 0 101.5 0V5A2.5 2.5 0 0011 2.5zm1 10.25a.75.75 0 111.5 0 .75.75 0
 01-1.5 0zM3.75 12a.75.75 0 100 1.5.75.75 0 000-1.5z" fill-rule="evenodd"></path>
</svg> Pull requests


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_DISCUSSIONS","click_v
isual_representation":"DISCUSSIONS_TAB","actor_id":null,"record_id":172521926,"originati
ng_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="e8c61cc3
4e64116e341512e9331c66e8c29eee9c88f61a064dc5aa1be720c2cb" data-turbo="false" data-view-c
omponent="true" href="/pmndrs/react-three-fiber/discussions" id="discussions-tab-1725219
26">
<svg aria-hidden="true" class="octicon octicon-comment-discussion color-fg-muted" data-v
iew-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M1.5 2.75a.25.25 0 01.25-.25h8.5a.25.25 0 01.25.25v5.5a.25.25 0 01-.25.25h-3.5
a.75.75 0 00-.53.22L3.5 11.44V9.25a.75.75 0 00-.75-.75h-1a.25.25 0 01-.25-.25v-5.5zM1.75
 1A1.75 1.75 0 000 2.75v5.5C0 9.216.784 10 1.75 10H2v1.543a1.457 1.457 0 002.487 1.03L7.
061 10h3.189A1.75 1.75 0 0012 8.25v-5.5A1.75 1.75 0 0010.25 1h-8.5zM14.5 4.75a.25.25 0 0
0-.25-.25h-.5a.75.75 0 110-1.5h.5c.966 0 1.75.784 1.75 1.75v5.5A1.75 1.75 0 0114.25 12H1
4v1.543a1.457 1.457 0 01-2.487 1.03L9.22 12.28a.75.75 0 111.06-1.06l2.22 2.22v-2.19a.75.
75 0 01.75-.75h1a.25.25 0 00.25-.25v-5.5z" fill-rule="evenodd"></path>
</svg> Discussions


</a></li>
</ul>
</nav>
<div class="color-bg-default rounded-bottom-2">
<div class="px-3 pt-3">
<p class="color-fg-muted mb-0"><div><g-emoji alias="switzerland" class="g-emoji" fallbac
k-src="https://github.githubassets.com/images/icons/emoji/unicode/1f1e8-1f1ed.png">CH</g
-emoji> A React renderer for Three.js</div></p>
</div>
<div class="d-flex flex-wrap border-bottom color-border-muted px-3 pt-2 pb-2">
<a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explore.cli
ck","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visual_re
presentation":"TOPIC_TAG","actor_id":null,"record_id":12,"originating_url":"https://gith
ub.com/topics/3d","user_id":null}}' data-hydro-click-hmac="31455c84db00fa8bfd4c95be4d57e
44cd0afb2eeb4b66bf5f85a337d9ba421eb" data-view-component="true" href="/topics/react" tit
le="Topic: react">
            react
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":2120,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="7ac60336afb502388a7b4
d9d01d780620c0532c7cb9a549e5ef23f06607aa3b8" data-view-component="true" href="/topics/th
reejs" title="Topic: threejs">
              threejs
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":12696,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="8d51b40a17d0ec49d8c9f
94809ea177ea83b904e1cebb646fa825a2eefc6d778" data-view-component="true" href="/topics/an
imation" title="Topic: animation">
              animation
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":52959,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="dbdd542faaf925270e934
441b2a134861bfceb63bdebf84ba1fd8c467ed53590" data-view-component="true" href="/topics/re
nderer" title="Topic: renderer">
              renderer
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":178362,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="339e47bd7e56238ee273
b3e6c0fb34c5a397f3bfaf62dfeec3e4cc9b1797b4ea" data-view-component="true" href="/topics/f
iber" title="Topic: fiber">
              fiber
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":238400,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="028a08f740516273aa7f
05a2f5db3c450593017549ffa99920f497664d796dbe" data-view-component="true" href="/topics/3
d" title="Topic: 3d">
              3d
 </div>
<div class="p-3">
<ul class="d-flex f6 list-style-none color-fg-muted">
<li class="mr-4">
              Updated
              <relative-time class="no-wrap" datetime="2022-08-29T07:32:51Z">Aug 29, 2022
</relative-time>

<li class="mr-4">

TypeScript

</div>
</div>
</article>
<article class="border rounded color-shadow-small color-bg-subtle my-4">
<a class="overflow-hidden flex-items-center rounded-top-2 color-border-muted border-bott
om d-flex position-relative" data-hydro-click='{"event_type":"explore.click","payload":
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ion":"REPOSITORY_IMAGE","actor_id":null,"record_id":11007313,"originating_url":"https://
github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="e09fc343248ed5956313f1c4a
2d3f2c4f66c2cd8720b2e2f99a1f02e5eec4164" data-turbo="false" data-view-component="true" h
ref="/BabylonJS/Babylon.js" style="max-height:275px">
<img alt="Babylon.js" class="d-block width-full" loading="lazy" src="https://repository-
images.githubusercontent.com/11007313/03147e80-4379-11ea-80b8-58c66da0bf29"/>

<div class="px-3">
<div class="d-flex flex-justify-between my-3">
<div class="d-flex flex-auto">

```html
<span style="margin-top:2px">
<svg aria-hidden="true" class="octicon octicon-repo color-fg-muted mr-2" data-view-compo
nent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M2 2.5A2.5 2.5 0 014.5 0h8.75a.75.75 0 01.75.75v12.5a.75.75 0 01-.75.75h-2.5a.7
5.75 0 110-1.5h1.75v-2h-8a1 1 0 00-.714 1.7.75.75 0 01-1.072 1.05A2.495 2.495 0 012 11.5
v-9zm10.5-1V9h-8c-.356 0-.694.074-1 .208V2.5a1 1 0 011-1h8zM5 12.25v3.25a.25.25 0 00.4.2
l1.45-1.087a.25.25 0 01.3 0L8.6 15.7a.25.25 0 00.4-.2v-3.25a.25.25 0 00-.25-.25h-3.5a.2
5.25 0 00-.25.25z" fill-rule="evenodd"></path>
</svg>
</span>
<h3 class="f3 color-fg-muted text-normal lh-condensed">
<a data-hydro-click='{"event_type":"explore.click","payload":{"click_context":"REPOSITOR
Y_CARD","click_target":"OWNER","click_visual_representation":"REPOSITORY_OWNER_HEADIN
G","actor_id":null,"record_id":4855800,"originating_url":"https://github.com/topics/3
d","user_id":null}}' data-hydro-click-hmac="35041b8540fc503301f61f50122b6ae6d1b78719943a
b6392df86920498edb30" data-turbo="false" data-view-component="true" href="/BabylonJS">
          BabylonJS
</a>        /
        <a class="text-bold wb-break-word" data-hydro-click='{"event_type":"explore.cl
ick","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY","click_vis
ual_representation":"REPOSITORY_NAME_HEADING","actor_id":null,"record_id":11007313,"orig
inating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="280
6ba0b1f7f4081c38662a53b466b7bc022050b5dafe4108bfab142f5214b41" data-turbo="false" data-v
iew-component="true" href="/BabylonJS/Babylon.js">
          Babylon.js
</a> </h3>
</div>
<div class="d-flex flex-items-center ml-3">
<div class="BtnGroup d-flex" data-view-component="true">
<a aria-label="You must be signed in to star a repository" class="tooltipped tooltipped-
s btn-sm btn BtnGroup-item color-bg-default" data-hydro-click='{"event_type":"authentica
tion.click","payload":{"location_in_page":"star button","repository_id":11007313,"auth_t
ype":"LOG_IN","originating_url":"https://github.com/topics/3d","user_id":null}}' data-hy
dro-click-hmac="db3ec3fd6c2c5b4b09ecae978b4e83cf29d34c70237da7c2577492bdafde6923" data-v
iew-component="true" href="/login?return_to=%2FBabylonJS%2FBabylon.js" rel="nofollow"> <
svg aria-hidden="true" class="octicon octicon-star v-align-text-bottom d-inline-block mr
-2" data-view-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 .25a.75.75 0 01.673.418l1.882 3.815 4.21.612a.75.75 0 01.416 1.279l-3.046 2.
97.719 4.192a.75.75 0 01-1.088.791L8 12.347l-3.766 1.98a.75.75 0 01-1.088-.79l.72-4.194
L.818 6.374a.75.75 0 01.416-1.28l4.21-.611L7.327.668A.75.75 0 018 .25zm0 2.445L6.615 5.5
a.75.75 0 01-.564.41l-3.097.45 2.24 2.184a.75.75 0 01.216.664l-.528 3.084 2.769-1.456a.7
5.75 0 01.698 0l2.77 1.456-.53-3.084a.75.75 0 01.216-.66l2.24-2.183-3.096-.45a.75.75 0
 01-.564-.41L8 2.694v.001z" fill-rule="evenodd"></path>
</svg><span class="d-inline" data-view-component="true">
          Star
</span> <span aria-label="18220 users starred this repository" class="Counter js-social-
count" data-pjax-replace="true" data-plural-suffix="users starred this repository" data-
singular-suffix="user starred this repository" data-turbo-replace="true" data-view-compo
nent="true" id="repo-stars-counter-star" title="18,220">18.2k</span>
</a> <button aria-label="You must be signed in to add this repository to a list" class
="btn-sm btn BtnGroup-item px-2" data-view-component="true" disabled="disabled" type="bu
tton"> <svg aria-hidden="true" class="octicon octicon-triangle-down" data-view-component
="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.427 7.427l3.396 3.396a.25.25 0 00.354 0l3.396-3.396A.25.25 0 0011.396 7H4.60
4a.25.25 0 00-.177.427z"></path>
</svg>
</button></div>
</div>
</div>
</div>
<nav aria-label="Repository menu" class="tabnav px-3 mb-0" data-view-component="true">
<ul class="tabnav-tabs" data-view-component="true">
<li class="d-inline-flex" data-view-component="true">
<a aria-current="true" class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_typ
e":"explore.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITO
RY","click_visual_representation":"CODE_TAB","actor_id":null,"record_id":11007313,"origi
```

```
nating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="e5e1
d39c1cf16df1bec954b53d8d5415b3d6f94438ae67c7961310053c0a4915" data-turbo="false" data-vi
ew-component="true" href="/BabylonJS/Babylon.js" id="code-tab-11007313">
<svg aria-hidden="true" class="octicon octicon-code color-fg-default" data-view-componen
t="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.72 3.22a.75.75 0 011.06 1.06L2.06 8l3.72 3.72a.75.75 0 11-1.06 1.06L.47 8.53
a.75.75 0 010-1.06l4.25-4.25zm6.56 0a.75.75 0 10-1.06 1.06L13.94 8l-3.72 3.72a.75.75 0 1
01.06 1.06l4.25-4.25a.75.75 0 000-1.06l-4.25-4.25z" fill-rule="evenodd"></path>
</svg> Code


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_ISSUES","click_visual
_representation":"ISSUES_TAB","actor_id":null,"record_id":11007313,"originating_url":"ht
tps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="9d455a368b42e21a817
6a8f1bf93516260456f0f58523aa538666b81da2050ad" data-turbo="false" data-view-component="t
rue" href="/BabylonJS/Babylon.js/issues" id="issues-tab-11007313">
<svg aria-hidden="true" class="octicon octicon-issue-opened color-fg-muted" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 9.5a1.5 1.5 0 100-3 1.5 1.5 0 000 3z"></path><path d="M8 0a8 8 0 100 16A8 8
 0 008 0zM1.5 8a6.5 6.5 0 1113 0 6.5 6.5 0 01-13 0z" fill-rule="evenodd"></path>
</svg> Issues


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
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_visual_representation":"PULL_REQUESTS_TAB","actor_id":null,"record_id":11007313,"origin
ating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="1a0be
87922f417512d9c95e999192c1b986873bdf0e78f3c6cf79fe835889c45" data-turbo="false" data-vie
w-component="true" href="/BabylonJS/Babylon.js/pulls" id="pull-requests-tab-11007313">
<svg aria-hidden="true" class="octicon octicon-git-pull-request color-fg-muted" data-vie
w-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M7.177 3.073L9.573.677A.25.25 0 0110 .854v4.792a.25.25 0 01-.427.177L7.177 3.42
7a.25.25 0 010-.354zM3.75 2.5a.75.75 0 100 1.5.75.75 0 000-1.5zm-2.25.75a2.25 2.25 0 113
 2.122v5.256a2.251 2.251 0 11-1.5 0V5.372A2.25 2.25 0 011.5 3.25zM11 2.5h-1V4h1a1 1 0 01
1 1v5.628a2.251 2.251 0 101.5 0V5A2.5 2.5 0 0011 2.5zm1 10.25a.75.75 0 111.5 0 .75.75 0
 01-1.5 0zM3.75 12a.75.75 0 100 1.5.75.75 0 000-1.5z" fill-rule="evenodd"></path>
</svg> Pull requests


</a></li>
</ul>
</nav>
<div class="color-bg-default rounded-bottom-2">
<div class="px-3 pt-3">
<p class="color-fg-muted mb-0"><div>Babylon.js is a powerful, beautiful, simple, and ope
n game and rendering engine packed into a friendly JavaScript framework.</div></p>
</div>
<div class="d-flex flex-wrap border-bottom color-border-muted px-3 pt-2 pb-2">
<a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explore.cli
ck","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visual_re
presentation":"TOPIC_TAG","actor_id":null,"record_id":2119,"originating_url":"https://gi
thub.com/topics/3d","user_id":null}}' data-hydro-click-hmac="d2e607f9d7b25ee5a5f68ce176f
ebce6c2f1236e5bf9ca64fdb5da5a01a19767" data-view-component="true" href="/topics/webgl" t
itle="Topic: webgl">
            webgl
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":7537,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="3ad9ad86d001282422212
601a1e5756b842eb01e0c354aabbd41be937fc84e09" data-view-component="true" href="/topics/ty
pescript" title="Topic: typescript">
```

```
              typescript
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":9691,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="094187bd578b0af2ca4dd
ce2dee5c56d24f949bd1f64166f94567416c247a61c" data-view-component="true" href="/topics/ga
me-engine" title="Topic: game-engine">
              game-engine
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":13255,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="bda371a5aa3dda8688435
05b5a28de34a11f9ffefa1e78ab23bda618e3b47cde" data-view-component="true" href="/topics/we
bvr" title="Topic: webvr">
              webvr
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":17135,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="97ebb0c4cebe425821647
eff3f7686beaf57bc04e57bf7f5c65a193c70d10824" data-view-component="true" href="/topics/ga
me-development" title="Topic: game-development">
              game-development
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":22694,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="927129dc1f55047771c17
1780cacedaf87358ae04349fb7513fe535114891375" data-view-component="true" href="/topics/we
baudio" title="Topic: webaudio">
              webaudio
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":23054,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="32ec1742edd80215f9fd1
c622975699dfeb3fd5a6b6b4ef1c10b10cc60bfb1b1" data-view-component="true" href="/topics/ba
bylon" title="Topic: babylon">
              babylon
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":177465,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="cf61b63494249752f032
1b2eccd33ed2bcf9ca557f15ed9efcd28b7992d76571" data-view-component="true" href="/topics/w
ebgl2" title="Topic: webgl2">
              webgl2
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":189572,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="bb8c241747b75aee4ec4
b0992f64e02460eb10d5b0f7e16a77f9d886069bdd8b" data-view-component="true" href="/topics/g
ame-engine-3d" title="Topic: game-engine-3d">
              game-engine-3d
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":238400,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="028a08f740516273aa7f
05a2f5db3c450593017549ffa99920f497664d796dbe" data-view-component="true" href="/topics/3
d" title="Topic: 3d">
              3d
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":353880,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="395c436d2736ec9d5a79
c790c2dd0221e3f58fc0cd466345ceed230d8b22f23e" data-view-component="true" href="/topics/w
ebgpu" title="Topic: webgpu">
              webgpu
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
```

al_representation":"TOPIC_TAG","actor_id":null,"record_id":571668,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="8e774c5aba5347fe9bbf
c3b57e647cd08049698eee18b701801a0e351990b17f" data-view-component="true" href="/topics/w
ebxr" title="Topic: webxr">
              webxr
 </div>
<div class="p-3">
<ul class="d-flex f6 list-style-none color-fg-muted">
<li class="mr-4">
              Updated
              <relative-time class="no-wrap" datetime="2022-08-29T17:52:14Z">Aug 29, 2022
</relative-time>

<li class="mr-4">

TypeScript

</div>
</div>
</article>
<article class="border rounded color-shadow-small color-bg-subtle my-4">
<div class="px-3">
<div class="d-flex flex-justify-between my-3">
<div class="d-flex flex-auto">

<svg aria-hidden="true" class="octicon octicon-repo color-fg-muted mr-2" data-view-compo
nent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M2 2.5A2.5 2.5 0 014.5 0h8.75a.75.75 0 01.75.75v12.5a.75.75 0 01-.75.75h-2.5a.7
5.75 0 110-1.5h1.75v-2h-8a1 1 0 00-.714 1.7.75.75 0 01-1.072 1.05A2.495 2.495 0 012 11.5
v-9zm10.5-1V9h-8c-.356 0-.694.074-1 .208V2.5a1 1 0 011-1h8zM5 12.25v3.25a.25.25 0 00.4.2
l1.45-1.087a.25.25 0 01.3 0L8.6 15.7a.25.25 0 00.4-.2v-3.25a.25.25 0 00-.25-.25h-3.5a.2
5.25 0 00-.25.25z" fill-rule="evenodd"></path>
</svg>

<h3 class="f3 color-fg-muted text-normal lh-condensed">
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Y_CARD","click_target":"OWNER","click_visual_representation":"REPOSITORY_OWNER_HEADIN
G","actor_id":null,"record_id":1029298,"originating_url":"https://github.com/topics/3
d","user_id":null}}' data-hydro-click-hmac="35cf14368807d0a0abce48667cf2c0778c4e44ceeb4e
dde9a860e17a9efe6443" data-turbo="false" data-view-component="true" href="/ssloy">
              ssloy
   /
          <a class="text-bold wb-break-word" data-hydro-click='{"event_type":"explore.cl
ick","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY","click_vis
ual_representation":"REPOSITORY_NAME_HEADING","actor_id":null,"record_id":29397594,"orig
inating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="b27
b44faaea7b496d3a92fd58b20e39b4306098a16dc535f3a74969bd25fc472" data-turbo="false" data-v
iew-component="true" href="/ssloy/tinyrenderer">
              tinyrenderer
 </h3>
</div>
<div class="d-flex flex-items-center ml-3">
<div class="BtnGroup d-flex" data-view-component="true">
<a aria-label="You must be signed in to star a repository" class="tooltipped tooltipped-
s btn-sm btn BtnGroup-item color-bg-default" data-hydro-click='{"event_type":"authentica
tion.click","payload":{"location_in_page":"star button","repository_id":29397594,"auth_t
ype":"LOG_IN","originating_url":"https://github.com/topics/3d","user_id":null}}' data-hy
dro-click-hmac="b6ccaaf002bed7807f6bfb4d2b8d8340e26b867ed8b263a5a3062559b8a34182" data-v
iew-component="true" href="/login?return_to=%2Fssloy%2Ftinyrenderer" rel="nofollow"> <sv
g aria-hidden="true" class="octicon octicon-star v-align-text-bottom d-inline-block mr-
2" data-view-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 .25a.75.75 0 01.673.418l1.882 3.815 4.21.612a.75.75 0 01.416 1.279l-3.046 2.
97.719 4.192a.75.75 0 01-1.088.791L8 12.347l-3.766 1.98a.75.75 0 01-1.088-.79l.72-4.194

```
L.818 6.374a.75.75 0 01.416-1.28l4.21-.611L7.327.668A.75.75 0 018 .25zm0 2.445L6.615 5.5
a.75.75 0 01-.564.41l-3.097.45 2.24 2.184a.75.75 0 01.216.664l-.528 3.084 2.769-1.456a.7
5.75 0 01.698 0l2.77 1.456-.53-3.084a.75.75 0 01.216-.664l2.24-2.183-3.096-.45a.75.75 0
01-.564-.41L8 2.694v.001z" fill-rule="evenodd"></path>
</svg><span class="d-inline" data-view-component="true">
          Star
</span> <span aria-label="14523 users starred this repository" class="Counter js-social-
count" data-pjax-replace="true" data-plural-suffix="users starred this repository" data-
singular-suffix="user starred this repository" data-turbo-replace="true" data-view-compo
nent="true" id="repo-stars-counter-star" title="14,523">14.5k</span>
</a> <button aria-label="You must be signed in to add this repository to a list" class
="btn-sm btn BtnGroup-item px-2" data-view-component="true" disabled="disabled" type="bu
tton"> <svg aria-hidden="true" class="octicon octicon-triangle-down" data-view-component
="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.427 7.427l3.396 3.396a.25.25 0 00.354 0l3.396-3.396A.25.25 0 0011.396 7H4.60
4a.25.25 0 00-.177.427z"></path>
</svg>
</button></div>
</div>
</div>
</div>
<nav aria-label="Repository menu" class="tabnav px-3 mb-0" data-view-component="true">
<ul class="tabnav-tabs" data-view-component="true">
<li class="d-inline-flex" data-view-component="true">
<a aria-current="true" class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_typ
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RY","click_visual_representation":"CODE_TAB","actor_id":null,"record_id":29397594,"origi
nating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="a207
e5f10c69a2ac07fd473b4e5984ba6cfb9b1b95b6af3658585eb3873b82a6" data-turbo="false" data-vi
ew-component="true" href="/ssloy/tinyrenderer" id="code-tab-29397594">
<svg aria-hidden="true" class="octicon octicon-code color-fg-default" data-view-componen
t="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.72 3.22a.75.75 0 011.06 1.06L2.06 8l3.72 3.72a.75.75 0 11-1.06 1.06L.47 8.53
a.75.75 0 010-1.06l4.25-4.25zm6.56 0a.75.75 0 10-1.06 1.06L13.94 8l-3.72 3.72a.75.75 0 1
01.06 1.06l4.25-4.25a.75.75 0 000-1.06l-4.25-4.25z" fill-rule="evenodd"></path>
</svg> Code


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
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_representation":"ISSUES_TAB","actor_id":null,"record_id":29397594,"originating_url":"ht
tps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="e7d1654806273e96f52
7a294dcdf8689ad296b054815262eea5a67a0b0d0db8b" data-turbo="false" data-view-component="t
rue" href="/ssloy/tinyrenderer/issues" id="issues-tab-29397594">
<svg aria-hidden="true" class="octicon octicon-issue-opened color-fg-muted" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 9.5a1.5 1.5 0 100-3 1.5 1.5 0 000 3z"></path><path d="M8 0a8 8 0 100 16A8 8
 0 008 0zM1.5 8a6.5 6.5 0 1113 0 6.5 6.5 0 01-13 0z" fill-rule="evenodd"></path>
</svg> Issues


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
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_visual_representation":"PULL_REQUESTS_TAB","actor_id":null,"record_id":29397594,"origin
ating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="df67f
41bee471289c9d1bf84315b27726a716fc86719a22d071497effcc1e5bc" data-turbo="false" data-vie
w-component="true" href="/ssloy/tinyrenderer/pulls" id="pull-requests-tab-29397594">
<svg aria-hidden="true" class="octicon octicon-git-pull-request color-fg-muted" data-vie
w-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M7.177 3.073L9.573.677A.25.25 0 0110 .854v4.792a.25.25 0 01-.427.177L7.177 3.42
7a.25.25 0 010-.354zM3.75 2.5a.75.75 0 100 1.5.75.75 0 000-1.5zm-2.25.75a2.25 2.25 0 113
 2.122v5.256a2.251 2.251 0 11-1.5 0V5.372A2.25 2.25 0 011.5 3.25zM11 2.5h-1V4h1a1 1 0 01
```

```
     1 1v5.628a2.251 2.251 0 101.5 0V5A2.5 2.5 0 0011 2.5zm1 10.25a.75.75 0 111.5 0 .75.75 0
      01-1.5 0zM3.75 12a.75.75 0 100 1.5.75.75 0 000-1.5z" fill-rule="evenodd"></path>
     </svg> Pull requests


     </a></li>
     </ul>
     </nav>
     <div class="color-bg-default rounded-bottom-2">
     <div class="px-3 pt-3">
     <p class="color-fg-muted mb-0"><div>A brief computer graphics / rendering course</div></
     p>
     </div>
     <div class="d-flex flex-wrap border-bottom color-border-muted px-3 pt-2 pb-2">
     <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explore.cli
     ck","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visual_re
     presentation":"TOPIC_TAG","actor_id":null,"record_id":365,"originating_url":"https://git
     hub.com/topics/3d","user_id":null}}' data-hydro-click-hmac="299965c1e09b0b7cb7cd57cade43
     4e25ecb923c7c461caad11867add1a56e160" data-view-component="true" href="/topics/learning"
      title="Topic: learning">
                 learning
     </a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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     al_representation":"TOPIC_TAG","actor_id":null,"record_id":658,"originating_url":"http
     s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="839a6eeb2274c8da68dbc
     0d261e541da47bfcdbff2930932df94162f9346b88b" data-view-component="true" href="/topics/c-
     plus-plus" title="Topic: c-plus-plus">
                 c-plus-plus
     </a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
     e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
     al_representation":"TOPIC_TAG","actor_id":null,"record_id":871,"originating_url":"http
     s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="4c3b6a31c7994583b64df
     16a162f53a001392e5c6e5468468971692f37f8655b" data-view-component="true" href="/topics/fu
     n" title="Topic: fun">
                 fun
     </a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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     al_representation":"TOPIC_TAG","actor_id":null,"record_id":7510,"originating_url":"http
     s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="bb926a56e33f7407a42b2
     989b18d5f8f81d4f0a05545677c372edc3e1b2d83c3" data-view-component="true" href="/topics/tu
     torial" title="Topic: tutorial">
                 tutorial
     </a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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     al_representation":"TOPIC_TAG","actor_id":null,"record_id":8973,"originating_url":"http
     s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="adc813d832197f96443bc
     9ead9e362219f953f9cfdbceb7d210b485a57d17430" data-view-component="true" href="/topics/op
     engl" title="Topic: opengl">
                 opengl
     </a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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     al_representation":"TOPIC_TAG","actor_id":null,"record_id":9802,"originating_url":"http
     s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="e904e07fa8e0d57542653
     ce8f2a688e7a101f7464a09c59717828a65d1797b41" data-view-component="true" href="/topics/cp
     p" title="Topic: cpp">
                 cpp
     </a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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     al_representation":"TOPIC_TAG","actor_id":null,"record_id":12202,"originating_url":"http
     s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="713b91119201bf0ba3810
     268d6c51302839f93cc633e66c4148461b70cb0fa5d" data-view-component="true" href="/topics/sh
     aders" title="Topic: shaders">
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s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="67479b45b8fd81f7bb162
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cture" title="Topic: picture">
                picture
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":12901,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="2b668f0139bfddf34bc3d
b1f441d92aac3eb1c42fad81afca3a755d515c7b858" data-view-component="true" href="/topics/gr
aphics" title="Topic: graphics">
                graphics
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":12984,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="545ef78393791e89745a5
eb22eb5f1803fc1d90132bda6e82da39f825a0364db" data-view-component="true" href="/topics/so
ftware-rendering" title="Topic: software-rendering">
                software-rendering
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e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":13044,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="2015f0d78223eaf17e26e
da12fcf38fc11abea03502f3915efb321320575a87b" data-view-component="true" href="/topics/en
gine" title="Topic: engine">
                engine
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":13080,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="517f6d4da5cec1ee4dfaf
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ndering" title="Topic: rendering">
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":13110,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="ef4b51cdaa559a5229a24
6bff3e6a113904ea8b97a7559d640cd68abcb7f2c90" data-view-component="true" href="/topics/im
ages" title="Topic: images">
                images
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="0d6ae46592545600a99c0
f4c621dc9f42e729579a898a01de9cc0333c4ec0871" data-view-component="true" href="/topics/co
mputer-graphics" title="Topic: computer-graphics">
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 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="89e434f95497e9bf76d00
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xels" title="Topic: pixels">
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 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":43831,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="b146dfc000f8bcdcbbaf5
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sterizer" title="Topic: rasterizer">
                rasterizer
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":94219,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="0930a4053471d66210ada
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ndering-engine" title="Topic: rendering-engine">

```
                        rendering-engine
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":238188,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="d4e834e6568188e5d4fe
8688a386dce368301f1081de78ecfff1f848d2713c25" data-view-component="true" href="/topics/r
endering-pipeline" title="Topic: rendering-pipeline">
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ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="028a08f740516273aa7f
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d" title="Topic: 3d">
                        3d
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":282405,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="067a48a3f9f47e9a40ea
c965cb487150f6316888b370986da8f3c036fd4cd028" data-view-component="true" href="/topics/3
d-graphics" title="Topic: 3d-graphics">
                        3d-graphics
</a> </div>
<div class="p-3">
<ul class="d-flex f6 list-style-none color-fg-muted">
<li class="mr-4">
                Updated
                <relative-time class="no-wrap" datetime="2022-07-23T05:29:08Z">Jul 23, 2022
</relative-time>
</li>
<li class="mr-4">
<span class="f6 my-1 ml-0">
<span class="repo-language-color" style="background-color: #f34b7d"></span>
<span itemprop="programmingLanguage">C++</span>
</span>
</li>
</ul>
</div>
</div>
</article>
<article class="border rounded color-shadow-small color-bg-subtle my-4">
<div class="px-3">
<div class="d-flex flex-justify-between my-3">
<div class="d-flex flex-auto">
<span style="margin-top:2px">
<svg aria-hidden="true" class="octicon octicon-repo color-fg-muted mr-2" data-view-compo
nent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
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5.75 0 110-1.5h1.75v-2h-8a1 1 0 00-.714 1.7.75.75 0 01-1.072 1.05A2.495 2.495 0 012 11.5
v-9zm10.5-1V9h-8c-.356 0-.694.074-1 .208V2.5a1 1 0 011-1h8zM5 12.25v3.25a.25.25 0 00.4.2
l1.45-1.087a.25.25 0 01.3 0L8.6 15.7a.25.25 0 00.4-.2v-3.25a.25.25 0 00-.25-.25h-3.5a.2
5.25 0 00-.25.25z" fill-rule="evenodd"></path>
</svg>
</span>
<h3 class="f3 color-fg-muted text-normal lh-condensed">
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d","user_id":null}}' data-hydro-click-hmac="b3db1ab47cddd377d61855a33924676044d55c8724ce
9233f202e64b2a59e40e" data-turbo="false" data-view-component="true" href="/aframevr">
                        aframevr
</a>                     /
                <a class="text-bold wb-break-word" data-hydro-click='{"event_type":"explore.cl
ick","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY","click_vis
ual_representation":"REPOSITORY_NAME_HEADING","actor_id":null,"record_id":42488903,"orig
inating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="1e9
```

```
7be781c78a538510c9e0a7eb97d3d14666ccab0fce09440cf2ef4f543317a" data-turbo="false" data-v
iew-component="true" href="/aframevr/aframe">
                aframe
</a> </h3>
</div>
<div class="d-flex flex-items-center ml-3">
<div class="BtnGroup d-flex" data-view-component="true">
<a aria-label="You must be signed in to star a repository" class="tooltipped tooltipped-
s btn-sm btn BtnGroup-item color-bg-default" data-hydro-click='{"event_type":"authentica
tion.click","payload":{"location_in_page":"star button","repository_id":42488903,"auth_t
ype":"LOG_IN","originating_url":"https://github.com/topics/3d","user_id":null}}' data-hy
dro-click-hmac="a8c4f99905cfbde49af80da42191e760a64450a70c4051138ae495ab044de6e1" data-v
iew-component="true" href="/login?return_to=%2Faframevr%2Faframe" rel="nofollow"> <svg a
ria-hidden="true" class="octicon octicon-star v-align-text-bottom d-inline-block mr-2" d
ata-view-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 .25a.75.75 0 01.673.418l1.882 3.815 4.21.612a.75.75 0 01.416 1.279l-3.046 2.
97.719 4.192a.75.75 0 01-1.088.791L8 12.347l-3.766 1.98a.75.75 0 01-1.088-.79l.72-4.194
L.818 6.374a.75.75 0 01.416-1.28l4.21-.611L7.327.668A.75.75 0 018 .25zm0 2.445L6.615 5.5
a.75.75 0 01-.564.41l-3.097.45 2.24 2.184a.75.75 0 01.216.664l-.528 3.084 2.769-1.456a.7
5.75 0 01.698 0l2.77 1.456-.53-3.084a.75.75 0 01.216-.664l2.24-2.183-3.096-.45a.75.75 0
 01-.564-.41L8 2.694v.001z" fill-rule="evenodd"></path>
</svg><span class="d-inline" data-view-component="true">
          Star
</span> <span aria-label="14486 users starred this repository" class="Counter js-social-
count" data-pjax-replace="true" data-plural-suffix="users starred this repository" data-
singular-suffix="user starred this repository" data-turbo-replace="true" data-view-compo
nent="true" id="repo-stars-counter-star" title="14,486">14.5k</span>
</a> <button aria-label="You must be signed in to add this repository to a list" class
="btn-sm btn BtnGroup-item px-2" data-view-component="true" disabled="disabled" type="bu
tton"> <svg aria-hidden="true" class="octicon octicon-triangle-down" data-view-component
="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.427 7.427l3.396 3.396a.25.25 0 00.354 0l3.396-3.396A.25.25 0 0011.396 7H4.60
4a.25.25 0 00-.177.427z"></path>
</svg>
</button></div>
</div>
</div>
</div>
<nav aria-label="Repository menu" class="tabnav px-3 mb-0" data-view-component="true">
<ul class="tabnav-tabs" data-view-component="true">
<li class="d-inline-flex" data-view-component="true">
<a aria-current="true" class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_typ
e":"explore.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITO
RY","click_visual_representation":"CODE_TAB","actor_id":null,"record_id":42488903,"origi
nating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="c0e2
ae27139ef650de51b10a780577fae90a40c34731aff987ae8e56addf7c90" data-turbo="false" data-vi
ew-component="true" href="/aframevr/aframe" id="code-tab-42488903">
<svg aria-hidden="true" class="octicon octicon-code color-fg-default" data-view-componen
t="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.72 3.22a.75.75 0 011.06 1.06L2.06 8l3.72 3.72a.75.75 0 11-1.06 1.06L.47 8.53
a.75.75 0 010-1.06l4.25-4.25zm6.56 0a.75.75 0 10-1.06 1.06L13.94 8l-3.72 3.72a.75.75 0 1
01.06 1.06l4.25-4.25a.75.75 0 000-1.06l-4.25-4.25z" fill-rule="evenodd"></path>
</svg> Code


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_ISSUES","click_visual
_representation":"ISSUES_TAB","actor_id":null,"record_id":42488903,"originating_url":"ht
tps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="e3b6c60ce8282f61b9b
ec430814e676c864b8876a535479a402b2611556c82f0" data-turbo="false" data-view-component="t
rue" href="/aframevr/aframe/issues" id="issues-tab-42488903">
<svg aria-hidden="true" class="octicon octicon-issue-opened color-fg-muted" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 9.5a1.5 1.5 0 100-3 1.5 1.5 0 000 3z"></path><path d="M8 0a8 8 0 100 16A8 8
```

```html
 0 008 0zM1.5 8a6.5 6.5 0 1113 0 6.5 6.5 0 01-13 0z" fill-rule="evenodd"></path>
</svg> Issues


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_PULL_REQUESTS","click
_visual_representation":"PULL_REQUESTS_TAB","actor_id":null,"record_id":42488903,"origin
ating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="4cced
9374f41f5b401b5e323bf988328653709ec2fb2667ccb986696da95431c" data-turbo="false" data-vie
w-component="true" href="/aframevr/aframe/pulls" id="pull-requests-tab-42488903">
<svg aria-hidden="true" class="octicon octicon-git-pull-request color-fg-muted" data-vie
w-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M7.177 3.073L9.573.677A.25.25 0 0110 .854v4.792a.25.25 0 01-.427.177L7.177 3.42
7a.25.25 0 010-.354zM3.75 2.5a.75.75 0 100 1.5.75.75 0 000-1.5zm-2.25.75a2.25 2.25 0 113
 2.122v5.256a2.251 2.251 0 11-1.5 0V5.372A2.25 2.25 0 011.5 3.25zM11 2.5h-1V4h1a1 1 0 01
1 1v5.628a2.251 2.251 0 101.5 0V5A2.5 2.5 0 0011 2.5zm1 10.25a.75.75 0 111.5 0 .75.75 0
 01-1.5 0zM3.75 12a.75.75 0 100 1.5.75.75 0 000-1.5z" fill-rule="evenodd"></path>
</svg> Pull requests


</a></li>
</ul>
</nav>
<div class="color-bg-default rounded-bottom-2">
<div class="px-3 pt-3">
<p class="color-fg-muted mb-0"><div><g-emoji alias="a" class="g-emoji" fallback-src="htt
ps://github.githubassets.com/images/icons/emoji/unicode/1f170.png">Ⓐ</g-emoji> web fra
mework for building virtual reality experiences.</div></p>
</div>
<div class="d-flex flex-wrap border-bottom color-border-muted px-3 pt-2 pb-2">
<a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explore.cli
ck","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visual_re
presentation":"TOPIC_TAG","actor_id":null,"record_id":203,"originating_url":"https://git
hub.com/topics/3d","user_id":null}}' data-hydro-click-hmac="f525ea5f52b2e439dab9a3dc7cff
6e7622aa2b7a26f82bf10d8ddcc250ce6402" data-view-component="true" href="/topics/html" tit
le="Topic: html">
            html
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":2120,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="7ac60336afb502388a7b4
d9d01d780620c0532c7cb9a549e5ef23f06607aa3b8" data-view-component="true" href="/topics/th
reejs" title="Topic: threejs">
            threejs
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":9691,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="094187bd578b0af2ca4dd
ce2dee5c56d24f949bd1f64166f94567416c247a61c" data-view-component="true" href="/topics/ga
me-engine" title="Topic: game-engine">
            game-engine
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":13254,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="2aa841c249722918446bf
8d4bb58980892b3af4a53a14e243a2f52a7a3a2bf6d" data-view-component="true" href="/topics/v
r" title="Topic: vr">
            vr
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":13255,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="bda371a5aa3dda8688435
05b5a28de34a11f9ffefa1e78ab23bda618e3b47cde" data-view-component="true" href="/topics/we
bvr" title="Topic: webvr">
```

```
                webvr
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":13263,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="4ea265920e7b46b8b6e5e
0a31714f9cbe06ac8eeeedad9794d64eb3f067ee6d9" data-view-component="true" href="/topics/vi
rtualreality" title="Topic: virtualreality">
                virtualreality
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":13391,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="80f118377f299ae8d9c80
867583a03e827188d9e5c9eb843ebaa9063c5f8e232" data-view-component="true" href="/topics/vi
ve" title="Topic: vive">
                vive
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":13438,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="5ff6f22b856b3dd5bed33
0bab01f9e7493f8826913653fb84d1ab116e91497e0" data-view-component="true" href="/topics/oc
ulus" title="Topic: oculus">
                oculus
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":13470,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="7a369a5d63d489995ef71
c54ad5165d454a15b74c3ab570836cc5000b2328500" data-view-component="true" href="/topics/ri
ft" title="Topic: rift">
                rift
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":22501,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="ae95ca2961478e4262f69
4a41249b1be0a260b10aaf273739aa83af613706e59" data-view-component="true" href="/topics/ec
s" title="Topic: ecs">
                ecs
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":23296,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="7d018575d507bf2ace0f4
34ff8f0ddb2b55b2be6015538dda18d79f58e0548f0" data-view-component="true" href="/topics/af
rame" title="Topic: aframe">
                aframe
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":28032,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="ea85696e8aa0a67c81a14
1f30c695d159fc4481d2d6f4f600b8e98fc46139f77" data-view-component="true" href="/topics/vi
rtual-reality" title="Topic: virtual-reality">
                virtual-reality
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":232394,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="e2cbc60d529e97852937
17564780b8821d79689ed3d80502d771e665bb8ca7ce" data-view-component="true" href="/topics/d
aydream" title="Topic: daydream">
                daydream
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":238400,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="028a08f740516273aa7f
05a2f5db3c450593017549ffa99920f497664d796dbe" data-view-component="true" href="/topics/3
d" title="Topic: 3d">
                3d
</a> </div>
<div class="p-3">
```

```html
<ul class="d-flex f6 list-style-none color-fg-muted">
<li class="mr-4">
            Updated
            <relative-time class="no-wrap" datetime="2022-08-29T09:03:55Z">Aug 29, 2022
</relative-time>
</li>
<li class="mr-4">
<span class="f6 my-1 ml-0">
<span class="repo-language-color" style="background-color: #f1e05a"></span>
<span itemprop="programmingLanguage">JavaScript</span>
</span>
</li>
</ul>
</div>
</div>
</article>
<article class="border rounded color-shadow-small color-bg-subtle my-4">
<a class="overflow-hidden flex-items-center rounded-top-2 color-border-muted border-bott
om d-flex position-relative" data-hydro-click='{"event_type":"explore.click","payload":
{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY","click_visual_representat
ion":"REPOSITORY_IMAGE","actor_id":null,"record_id":186309296,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="5a16bb7aec8d03572f248
b4858e6f23a7f940c130d6769a668e336e252e11bfb" data-turbo="false" data-view-component="tru
e" href="/lettier/3d-game-shaders-for-beginners" style="max-height:275px">
<img alt="3d-game-shaders-for-beginners" class="d-block width-full" loading="lazy" src
="https://repository-images.githubusercontent.com/186309296/7b42c500-324f-11ea-8d76-3db7
2adb45e8"/>
</a>
<div class="px-3">
<div class="d-flex flex-justify-between my-3">
<div class="d-flex flex-auto">
<span style="margin-top:2px">
<svg aria-hidden="true" class="octicon octicon-repo color-fg-muted mr-2" data-view-compo
nent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M2 2.5A2.5 2.5 0 014.5 0h8.75a.75.75 0 01.75.75v12.5a.75.75 0 01-.75.75h-2.5a.7
5.75 0 110-1.5h1.75v-2h-8a1 1 0 00-.714 1.7.75.75 0 01-1.072 1.05A2.495 2.495 0 012 11.5
v-9zm10.5-1V9h-8c-.356 0-.694.074-1 .208V2.5a1 1 0 011-1h8zM5 12.25v3.25a.25.25 0 00.4.2
l1.45-1.087a.25.25 0 01.3 0L8.6 15.7a.25.25 0 00.4-.2v-3.25a.25.25 0 00-.25-.25h-3.5a.2
5.25 0 00-.25.25z" fill-rule="evenodd"></path>
</svg>
</span>
<h3 class="f3 color-fg-muted text-normal lh-condensed">
<a data-hydro-click='{"event_type":"explore.click","payload":{"click_context":"REPOSITOR
Y_CARD","click_target":"OWNER","click_visual_representation":"REPOSITORY_OWNER_HEADIN
G","actor_id":null,"record_id":1661343,"originating_url":"https://github.com/topics/3
d","user_id":null}}' data-hydro-click-hmac="92e006e158e11505867ec48dd3b1f9f2e0a12e03556d
650ac6163f635b6018db" data-turbo="false" data-view-component="true" href="/lettier">
            lettier
</a>          /
        <a class="text-bold wb-break-word" data-hydro-click='{"event_type":"explore.cl
ick","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY","click_vis
ual_representation":"REPOSITORY_NAME_HEADING","actor_id":null,"record_id":186309296,"ori
ginating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="63
2d2fdc55d44af08fe1e943134b255567a5fc78d44f267f13687602afc3c8f4" data-turbo="false" data-
view-component="true" href="/lettier/3d-game-shaders-for-beginners">
            3d-game-shaders-for-beginners
</a> </h3>
</div>
<div class="d-flex flex-items-center ml-3">
<div class="BtnGroup d-flex" data-view-component="true">
<a aria-label="You must be signed in to star a repository" class="tooltipped tooltipped-
s btn-sm btn BtnGroup-item color-bg-default" data-hydro-click='{"event_type":"authentica
tion.click","payload":{"location_in_page":"star button","repository_id":186309296,"auth_
type":"LOG_IN","originating_url":"https://github.com/topics/3d","user_id":null}}' data-h
ydro-click-hmac="15204eb9e4692dbc57588cc1557e7af26de96cf29748c9487aea6c0509c74bb8" data-
view-component="true" href="/login?return_to=%2Flettier%2F3d-game-shaders-for-beginners"
```

```
rel="nofollow"> <svg aria-hidden="true" class="octicon octicon-star v-align-text-bottom
 d-inline-block mr-2" data-view-component="true" height="16" version="1.1" viewbox="0 0
 16 16" width="16">
<path d="M8 .25a.75.75 0 01.673.418l1.882 3.815 4.21.612a.75.75 0 01.416 1.279l-3.046 2.
97.719 4.192a.75.75 0 01-1.088.791L8 12.347l-3.766 1.98a.75.75 0 01-1.088-.79l.72-4.194
L.818 6.374a.75.75 0 01.416-1.28l4.21-.611L7.327.668A.75.75 0 018 .25zm0 2.445L6.615 5.5
a.75.75 0 01-.564.41l-3.097.45 2.24 2.184a.75.75 0 01.216.664l-.528 3.084 2.769-1.456a.7
5.75 0 01.698 0l2.77 1.456-.53-3.084a.75.75 0 01.216-.664l2.24-2.183-3.096-.45a.75.75 0
01-.564-.41L8 2.694v.001z" fill-rule="evenodd"></path>
</svg><span class="d-inline" data-view-component="true">
            Star
</span> <span aria-label="13573 users starred this repository" class="Counter js-social-
count" data-pjax-replace="true" data-plural-suffix="users starred this repository" data-
singular-suffix="user starred this repository" data-turbo-replace="true" data-view-compo
nent="true" id="repo-stars-counter-star" title="13,573">13.6k</span>
</a> <button aria-label="You must be signed in to add this repository to a list" class
="btn-sm btn BtnGroup-item px-2" data-view-component="true" disabled="disabled" type="bu
tton"> <svg aria-hidden="true" class="octicon octicon-triangle-down" data-view-component
="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.427 7.427l3.396 3.396a.25.25 0 00.354 0l3.396-3.396A.25.25 0 0011.396 7H4.60
4a.25.25 0 00-.177.427z"></path>
</svg>
</button></div>
</div>
</div>
</div>
<nav aria-label="Repository menu" class="tabnav px-3 mb-0" data-view-component="true">
<ul class="tabnav-tabs" data-view-component="true">
<li class="d-inline-flex" data-view-component="true">
<a aria-current="true" class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_typ
e":"explore.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITO
RY","click_visual_representation":"CODE_TAB","actor_id":null,"record_id":186309296,"orig
inating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="762
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iew-component="true" href="/lettier/3d-game-shaders-for-beginners" id="code-tab-18630929
6">
<svg aria-hidden="true" class="octicon octicon-code color-fg-default" data-view-componen
t="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.72 3.22a.75.75 0 011.06 1.06L2.06 8l3.72 3.72a.75.75 0 11-1.06 1.06L.47 8.53
a.75.75 0 010-1.06l4.25-4.25zm6.56 0a.75.75 0 10-1.06 1.06L13.94 8l-3.72 3.72a.75.75 0 1
01.06 1.06l4.25-4.25a.75.75 0 000-1.06l-4.25-4.25z" fill-rule="evenodd"></path>
</svg> Code


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
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ttps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="440046b8b5341d9826
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="true" href="/lettier/3d-game-shaders-for-beginners/issues" id="issues-tab-186309296">
<svg aria-hidden="true" class="octicon octicon-issue-opened color-fg-muted" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 9.5a1.5 1.5 0 100-3 1.5 1.5 0 000 3z"></path><path d="M8 0a8 8 0 100 16A8 8
 0 008 0zM1.5 8a6.5 6.5 0 1113 0 6.5 6.5 0 01-13 0z" fill-rule="evenodd"></path>
</svg> Issues


</a></li>
<li class="d-inline-flex" data-view-component="true">
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nating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="ac55
fb493d3fa16f36c84767634b581b34c487336f698aabdded7b531dafb90e" data-turbo="false" data-vi
```

```
ew-component="true" href="/lettier/3d-game-shaders-for-beginners/pulls" id="pull-request
s-tab-186309296">
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<path d="M7.177 3.073L9.573.677A.25.25 0 0110 .854v4.792a.25.25 0 01-.427.177L7.177 3.42
7a.25.25 0 010-.354zM3.75 2.5a.75.75 0 100 1.5.75.75 0 000-1.5zm-2.25.75a2.25 2.25 0 113
 2.122v5.256a2.251 2.251 0 11-1.5 0V5.372A2.25 2.25 0 011.5 3.25zM11 2.5h-1V4h1a1 1 0 01
1 1v5.628a2.251 2.251 0 101.5 0V5A2.5 2.5 0 0011 2.5zm1 10.25a.75.75 0 111.5 0 .75.75 0
 01-1.5 0zM3.75 12a.75.75 0 100 1.5.75.75 0 000-1.5z" fill-rule="evenodd"></path>
</svg> Pull requests



</a></li>
</ul>
</nav>
<div class="color-bg-default rounded-bottom-2">
<div class="px-3 pt-3">
<p class="color-fg-muted mb-0"><div><g-emoji alias="video_game" class="g-emoji" fallback
-src="https://github.githubassets.com/images/icons/emoji/unicode/1f3ae.png">🎮</g-emoji
> A step-by-step guide to implementing SSAO, depth of field, lighting, normal mapping, a
nd more for your 3D game.</div></p>
</div>
<div class="d-flex flex-wrap border-bottom color-border-muted px-3 pt-2 pb-2">
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presentation":"TOPIC_TAG","actor_id":null,"record_id":776,"originating_url":"https://git
hub.com/topics/3d","user_id":null}}' data-hydro-click-hmac="5cc76d7e8794afbc61021d86f4a0
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 title="Topic: gamedev">
            gamedev
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="d2e607f9d7b25ee5a5f68
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bgl" title="Topic: webgl">
            webgl
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="adc813d832197f96443bc
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engl" title="Topic: opengl">
            opengl
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":11962,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="31033761b251a70c82660
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ity" title="Topic: unity">
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</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":12202,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="713b91119201bf0ba3810
268d6c51302839f93cc633e66c4148461b70cb0fa5d" data-view-component="true" href="/topics/sh
aders" title="Topic: shaders">
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</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":12901,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="2b668f0139bfddf34bc3d
b1f441d92aac3eb1c42fad81afca3a755d515c7b858" data-view-component="true" href="/topics/gr
aphics" title="Topic: graphics">
            graphics
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":13293,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="c5d5d2b57d6ed1bfef4cc
490d0f653cb1895f760fa23c852a283025af7d75024" data-view-component="true" href="/topics/vu
lkan" title="Topic: vulkan">
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s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="97ebb0c4cebe425821647
eff3f7686beaf57bc04e57bf7f5c65a193c70d10824" data-view-component="true" href="/topics/ga
me-development" title="Topic: game-development">
                game-development
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":17582,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="6d8fc8db3b906bc8c5105
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sl" title="Topic: glsl">
                glsl
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":20639,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="5545a171f73850cf9473e
450d4e3c88e0df01fcc48b87de667febe3a814cccb5" data-view-component="true" href="/topics/sh
ader" title="Topic: shader">
                shader
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="0e82f07de2e9edee2c305
4e640421ddff5c84fcaa3a3aca89aeed20dc0d067a1" data-view-component="true" href="/topics/un
ity3d" title="Topic: unity3d">
                unity3d
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s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="9046766bdf8b2a2a74c23
acbb2c685eb72d7f03950a038a4636b712e556c3669" data-view-component="true" href="/topics/go
dot" title="Topic: godot">
                godot
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="39f5d302642f5b5ca557e
1ab17487f3f2d358f56851150e19ef6f3d285e4391c" data-view-component="true" href="/topics/gr
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":73410,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="e83c68e19bfaf5aad98c5
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sl" title="Topic: hlsl">
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ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="7c06722f753c7338c963
2ee0d5dec01a476f4f8cc6726c97ff97f9fe33efc6f0" data-view-component="true" href="/topics/p
anda3d" title="Topic: panda3d">
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":127587,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="b3da6ca16e8c996cf83a

```html
fd532f5e1f7377e5884f4690ab2d52756bad16c77b46" data-view-component="true" href="/topics/g
lsl-shader" title="Topic: glsl-shader">
                glsl-shader
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":223874,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="8a705983f5f95dec3d11
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ndiedev" title="Topic: indiedev">
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":237606,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="e802a452ab71a348b43e
67cba9f924df30b00769af6f7b058171b91dadd4e35b" data-view-component="true" href="/topics/g
lsl-shaders" title="Topic: glsl-shaders">
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d-graphics" title="Topic: 3d-graphics">
                3d-graphics
</a> </div>
<div class="p-3">
<ul class="d-flex f6 list-style-none color-fg-muted">
<li class="mr-4">
                Updated
                <relative-time class="no-wrap" datetime="2022-01-30T20:43:26Z">Jan 30, 2022
</relative-time>
</li>
<li class="mr-4">
<span class="f6 my-1 ml-0">
<span class="repo-language-color" style="background-color: #f34b7d"></span>
<span itemprop="programmingLanguage">C++</span>
</span>
</li>
</ul>
</div>
</div>
</article>
<article class="border rounded color-shadow-small color-bg-subtle my-4">
<div class="px-3">
<div class="d-flex flex-justify-between my-3">
<div class="d-flex flex-auto">
<span style="margin-top:2px">
<svg aria-hidden="true" class="octicon octicon-repo color-fg-muted mr-2" data-view-compo
nent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M2 2.5A2.5 2.5 0 014.5 0h8.75a.75.75 0 01.75.75v12.5a.75.75 0 01-.75.75h-2.5a.7
5.75 0 110-1.5h1.75v-2h-8a1 1 0 00-.714 1.7.75.75 0 01-1.072 1.05A2.495 2.495 0 012 11.5
v-9zm10.5-1V9h-8c-.356 0-.694.074-1 .208V2.5a1 1 0 011-1h8zM5 12.25v3.25a.25.25 0 00.4.2
l1.45-1.087a.25.25 0 01.3 0L8.6 15.7a.25.25 0 00.4-.2v-3.25a.25.25 0 00-.25-.25h-3.5a.2
5.25 0 00-.25.25z" fill-rule="evenodd"></path>
</svg>
</span>
<h3 class="f3 color-fg-muted text-normal lh-condensed">
<a data-hydro-click='{"event_type":"explore.click","payload":{"click_context":"REPOSITOR
Y_CARD","click_target":"OWNER","click_visual_representation":"REPOSITORY_OWNER_HEADIN
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G","actor_id":null,"record_id":2306237,"originating_url":"https://github.com/topics/3
d","user_id":null}}' data-hydro-click-hmac="a27e82740ebd440eb8aec51759f134d74f147b9f07c9
e1b2a8e960ff36c0e0dd" data-turbo="false" data-view-component="true" href="/FreeCAD">
              FreeCAD
   /
              <a class="text-bold wb-break-word" data-hydro-click='{"event_type":"explore.cl
ick","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY","click_vis
ual_representation":"REPOSITORY_NAME_HEADING","actor_id":null,"record_id":5736080,"origi
nating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="f409
ec71fa689bb04d504c411bd9676bb200cf6639b2678f72b9af816768dbbf" data-turbo="false" data-vi
ew-component="true" href="/FreeCAD/FreeCAD">
              FreeCAD
 </h3>
</div>
<div class="d-flex flex-items-center ml-3">
<a aria-label="Sponsor @FreeCAD" class="btn btn-sm mr-2" data-hydro-click='{"event_typ
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n":"FreeCAD","originating_url":"https://github.com/topics/3d","user_id":null}}' data-hyd
ro-click-hmac="17e7fd4cab0787da0a2af4a9f0debe5abbdd55b4c7ee5361ad0e26ff3b8a5214" data-vi
ew-component="true" href="/sponsors/FreeCAD">
<svg aria-hidden="true" class="octicon octicon-heart icon-sponsor mr-1 v-align-middle co
lor-fg-sponsors anim-pulse-in" data-view-component="true" height="16" version="1.1" view
box="0 0 16 16" width="16">
<path d="M4.25 2.5c-1.336 0-2.75 1.164-2.75 3 0 2.15 1.58 4.144 3.365 5.682A20.565 20.56
5 0 008 13.393a20.561 20.561 0 003.135-2.211C12.92 9.644 14.5 7.65 14.5 5.5c0-1.836-1.41
4-3-2.75-3-1.373 0-2.609.986-3.029 2.456a.75.75 0 01-1.442 0C6.859 3.486 5.623 2.5 4.25
 2.5zM8 14.25l-.345.666-.002-.001-.006-.003-.018-.01a7.643 7.643 0 01-.31-.17 22.075 22.
075 0 01-3.434-2.414C2.045 10.731 0 8.35 0 5.5 0 2.836 2.086 1 4.25 1 5.797 1 7.153 1.80
2 8 3.02 8.847 1.802 10.203 1 11.75 1 13.914 1 16 2.836 16 5.5c0 2.85-2.045 5.231-3.885
 6.818a22.08 22.08 0 01-3.744 2.584l-.018.01-.006.003h-.002L8 14.25zm0 0l.345.666a.752.7
52 0 01-.69 0L8 14.25z" fill-rule="evenodd"></path>
</svg>
Sponsor

<div class="BtnGroup d-flex" data-view-component="true">
<a aria-label="You must be signed in to star a repository" class="tooltipped tooltipped-
s btn-sm btn BtnGroup-item color-bg-default" data-hydro-click='{"event_type":"authentica
tion.click","payload":{"location_in_page":"star button","repository_id":5736080,"auth_ty
pe":"LOG_IN","originating_url":"https://github.com/topics/3d","user_id":null}}' data-hyd
ro-click-hmac="c0644dde27234fde0d56cfea710f244390f742f212de6e403b3a9205cebcabf2" data-vi
ew-component="true" href="/login?return_to=%2FFreeCAD%2FFreeCAD" rel="nofollow"> <svg ar
ia-hidden="true" class="octicon octicon-star v-align-text-bottom d-inline-block mr-2" da
ta-view-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
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97.719 4.192a.75.75 0 01-1.088.791L8 12.347l-3.766 1.98a.75.75 0 01-1.088-.79l.72-4.194
L.818 6.374a.75.75 0 01.416-1.28l4.21-.611L7.327.668A.75.75 0 018 .25zm0 2.445L6.615 5.5
a.75.75 0 01-.564.41l-3.097.45 2.24 2.184a.75.75 0 01.216.664l-.528 3.084 2.769-1.456a.7
5.75 0 01.698 0l2.77 1.456-.53-3.084a.75.75 0 01.216-.664l2.24-2.183-3.096-.45a.75.75 0
 01-.564-.41L8 2.694v.001z" fill-rule="evenodd"></path>
</svg>
          Star
 <span aria-label="12014 users starred this repository" class="Counter js-social-
count" data-pjax-replace="true" data-plural-suffix="users starred this repository" data-
singular-suffix="user starred this repository" data-turbo-replace="true" data-view-compo
nent="true" id="repo-stars-counter-star" title="12,014">12k
 <button aria-label="You must be signed in to add this repository to a list" class
="btn-sm btn BtnGroup-item px-2" data-view-component="true" disabled="disabled" type="bu
tton"> <svg aria-hidden="true" class="octicon octicon-triangle-down" data-view-component
="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
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4a.25.25 0 00-.177.427z"></path>
</svg>
</button></div>
</div>
</div>
</div>

```html
<nav aria-label="Repository menu" class="tabnav px-3 mb-0" data-view-component="true">
<ul class="tabnav-tabs" data-view-component="true">
<li class="d-inline-flex" data-view-component="true">
<a aria-current="true" class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_typ
e":"explore.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITO
RY","click_visual_representation":"CODE_TAB","actor_id":null,"record_id":5736080,"origin
ating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="2cc0c
27fa45e3522b8d84d03b20a7549bf49fdca5a37951e0e0a7fc1d49418eb" data-turbo="false" data-vie
w-component="true" href="/FreeCAD/FreeCAD" id="code-tab-5736080">
<svg aria-hidden="true" class="octicon octicon-code color-fg-default" data-view-componen
t="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.72 3.22a.75.75 0 011.06 1.06L2.06 8l3.72 3.72a.75.75 0 11-1.06 1.06L.47 8.53
a.75.75 0 010-1.06l4.25-4.25zm6.56 0a.75.75 0 10-1.06 1.06L13.94 8l-3.72 3.72a.75.75 0 1
01.06 1.06l4.25-4.25a.75.75 0 000-1.06l-4.25-4.25z" fill-rule="evenodd"></path>
</svg> Code


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_ISSUES","click_visual
_representation":"ISSUES_TAB","actor_id":null,"record_id":5736080,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="cd4f50e1f9431f699405
7fb9d51086a2de3a21637d69d544728910256926b4e9" data-turbo="false" data-view-component="tr
ue" href="/FreeCAD/FreeCAD/issues" id="issues-tab-5736080">
<svg aria-hidden="true" class="octicon octicon-issue-opened color-fg-muted" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 9.5a1.5 1.5 0 100-3 1.5 1.5 0 000 3z"></path><path d="M8 0a8 8 0 100 16A8 8
 0 008 0zM1.5 8a6.5 6.5 0 1113 0 6.5 6.5 0 01-13 0z" fill-rule="evenodd"></path>
</svg> Issues


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_PULL_REQUESTS","click
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ting_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="ed694f
525d0c5a29146dca495c28e2ce240ae1c16a693ec4fe6b5af8c88d7690" data-turbo="false" data-view
-component="true" href="/FreeCAD/FreeCAD/pulls" id="pull-requests-tab-5736080">
<svg aria-hidden="true" class="octicon octicon-git-pull-request color-fg-muted" data-vie
w-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M7.177 3.073L9.573.677A.25.25 0 0110 .854v4.792a.25.25 0 01-.427.177L7.177 3.42
7a.25.25 0 010-.354zM3.75 2.5a.75.75 0 100 1.5.75.75 0 000-1.5zm-2.25.75a2.25 2.25 0 113
 2.122v5.256a2.251 2.251 0 11-1.5 0V5.372A2.25 2.25 0 011.5 3.25zM11 2.5h-1V4h1a1 1 0 01
1 1v5.628a2.251 2.251 0 101.5 0V5A2.5 2.5 0 0011 2.5zm1 10.25a.75.75 0 111.5 0 .75.75 0
 01-1.5 0zM3.75 12a.75.75 0 100 1.5.75.75 0 000-1.5z" fill-rule="evenodd"></path>
</svg> Pull requests


</a></li>
</ul>
</nav>
<div class="color-bg-default rounded-bottom-2">
<div class="px-3 pt-3">
<p class="color-fg-muted mb-0"><div>This is the official source code of FreeCAD, a free
 and opensource multiplatform 3D parametric modeler.</div></p>
</div>
<div class="d-flex flex-wrap border-bottom color-border-muted px-3 pt-2 pb-2">
<a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explore.cli
ck","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visual_re
presentation":"TOPIC_TAG","actor_id":null,"record_id":198,"originating_url":"https://git
hub.com/topics/3d","user_id":null}}' data-hydro-click-hmac="4401c780d23c889b9c76f45497f9
70453541d4a81d69592220d29292a9c84fe3" data-view-component="true" href="/topics/windows"
 title="Topic: windows">
            windows
```

 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":200,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="bafae3445ec7531a94b91
fa467812f2418f9bfe23ec640e316c25bf4621e00e5" data-view-component="true" href="/topics/li
nux" title="Topic: linux">
            linux
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":741,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="25c37d63221a5527581dd
b34f41eeb6dd921fa6a57ea9be274015d63de99ebc0" data-view-component="true" href="/topics/en
gineering" title="Topic: engineering">
            engineering
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":13502,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="4a55fcffc472ed17d03c7
e2a8783e7e51c71d3bc6b3067660b43a07e589b3491" data-view-component="true" href="/topics/ar
chitecture" title="Topic: architecture">
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 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":23544,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="65d4192fe8a3163c00615
c9356d501fb040d6b1d43ab20a549dfa5478ed1f878" data-view-component="true" href="/topics/ca
d" title="Topic: cad">
            cad
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":73563,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="7aa0c9540530c6d803e4d
e6cad680e9bb08eb4af3a56bc6b98aed0bb889a7fc4" data-view-component="true" href="/topics/ma
c-osx" title="Topic: mac-osx">
            mac-osx
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":84413,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="a8e0d2c46435b99073c1d
e05ed24254487808c356c6225c7b83c90e859eb9f17" data-view-component="true" href="/topics/fe
m" title="Topic: fem">
            fem
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e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":85165,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="44bff6bb0113041f4d877
774003c0db4117ef35167a4a2745ce72a1af20b06d6" data-view-component="true" href="/topics/co
in" title="Topic: coin">
            coin
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":95795,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="f5dc989de1f274f93cdb7
6e7a24cf3ef298f6ef217936bd09d5be81129e161e8" data-view-component="true" href="/topics/bi
m" title="Topic: bim">
            bim
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":110834,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="4096f6662544c3c33998
a9ecf4392627f3bd098c460747fdc77088480d780c77" data-view-component="true" href="/topics/f
reecad" title="Topic: freecad">
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 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":232595,"originating_url":"htt

ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="4537651ce91580bfec20
3403e124b62249352a6e978a55da82b9a3cd1fe5e28d" data-view-component="true" href="/topics/3
d-printing" title="Topic: 3d-printing">
                3d-printing
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":238400,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="028a08f740516273aa7f
05a2f5db3c450593017549ffa99920f497664d796dbe" data-view-component="true" href="/topics/3
d" title="Topic: 3d">
                3d
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":316910,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="2ab5b4d0735877c1569f
3019293a61a9239c224e527ba9a7778ea4b2ab092ab1" data-view-component="true" href="/topics/o
pencascade" title="Topic: opencascade">
                opencascade
 </div>
<div class="p-3">
<ul class="d-flex f6 list-style-none color-fg-muted">
<li class="mr-4">
                Updated
                <relative-time class="no-wrap" datetime="2022-08-29T17:32:29Z">Aug 29, 2022
</relative-time>

<li class="mr-4">

C++

</div>
</div>
</article>
<article class="border rounded color-shadow-small color-bg-subtle my-4">
<a class="overflow-hidden flex-items-center rounded-top-2 color-border-muted border-bott
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ion":"REPOSITORY_IMAGE","actor_id":null,"record_id":174164624,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="06ab89c76ce98657e70a0
bb9b2b8f7999a33be02d5a52986abb99b5939757567" data-turbo="false" data-view-component="tru
e" href="/metafizzy/zdog" style="max-height:275px">
<img alt="zdog" class="d-block width-full" loading="lazy" src="https://repository-image
s.githubusercontent.com/174164624/d0d2d180-8198-11e9-807b-b1d6195cc6aa"/>

<div class="px-3">
<div class="d-flex flex-justify-between my-3">
<div class="d-flex flex-auto">

<svg aria-hidden="true" class="octicon octicon-repo color-fg-muted mr-2" data-view-compo
nent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M2 2.5A2.5 2.5 0 014.5 0h8.75a.75.75 0 01.75.75v12.5a.75.75 0 01-.75.75h-2.5a.7
5.75 0 110-1.5h1.75v-2h-8a1 1 0 00-.714 1.7.75.75 0 01-1.072 1.05A2.495 2.495 0 012 11.5
v-9zm10.5-1V9h-8c-.356 0-.694.074-1 .208V2.5a1 1 0 011-1h8zM5 12.25v3.25a.25.25 0 00.4.2
l1.45-1.087a.25.25 0 01.3 0L8.6 15.7a.25.25 0 00.4-.2v-3.25a.25.25 0 00-.25-.25h-3.5a.2
5.25 0 00-.25.25z" fill-rule="evenodd"></path>
</svg>

<h3 class="f3 color-fg-muted text-normal lh-condensed">
<a data-hydro-click='{"event_type":"explore.click","payload":{"click_context":"REPOSITOR
Y_CARD","click_target":"OWNER","click_visual_representation":"REPOSITORY_OWNER_HEADIN
G","actor_id":null,"record_id":573910,"originating_url":"https://github.com/topics/3
d","user_id":null}}' data-hydro-click-hmac="f5b3a8fc92d3f30b4468ca6255d50ef1ef41af4a277e
99a44368380d05695b49" data-turbo="false" data-view-component="true" href="/metafizzy">

```html
                    metafizzy
        </a>         /
                <a class="text-bold wb-break-word" data-hydro-click='{"event_type":"explore.cl
ick","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY","click_vis
ual_representation":"REPOSITORY_NAME_HEADING","actor_id":null,"record_id":174164624,"ori
ginating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="6e
f1f8dc07d99135ad796148e15edb48576348e33a218fa22dbb0a3954450801" data-turbo="false" data-
view-component="true" href="/metafizzy/zdog">
                zdog
        </a> </h3>
</div>
<div class="d-flex flex-items-center ml-3">
<div class="BtnGroup d-flex" data-view-component="true">
<a aria-label="You must be signed in to star a repository" class="tooltipped tooltipped-
s btn-sm btn BtnGroup-item color-bg-default" data-hydro-click='{"event_type":"authentica
tion.click","payload":{"location_in_page":"star button","repository_id":174164624,"auth_
type":"LOG_IN","originating_url":"https://github.com/topics/3d","user_id":null}}' data-h
ydro-click-hmac="0a80b40e60b12202f07e5c2f471876c9e160feb007acdc7c8b046c91378351bc" data-
view-component="true" href="/login?return_to=%2Fmetafizzy%2Fzdog" rel="nofollow"> <svg a
ria-hidden="true" class="octicon octicon-star v-align-text-bottom d-inline-block mr-2" d
ata-view-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 .25a.75.75 0 01.673.418l1.882 3.815 4.21.612a.75.75 0 01.416 1.279l-3.046 2.
97.719 4.192a.75.75 0 01-1.088.791L8 12.347l-3.766 1.98a.75.75 0 01-1.088-.79l.72-4.194
L.818 6.374a.75.75 0 01.416-1.28l4.21-.611L7.327.668A.75.75 0 018 .25zm0 2.445L6.615 5.5
a.75.75 0 01-.564.41l-3.097.45 2.24 2.184a.75.75 0 01.216.664l-.528 3.084 2.769-1.456a.7
5.75 0 01.698 0l2.77 1.456-.53-3.084a.75.75 0 01.216-.664l2.24-2.183-3.096-.45a.75.75 0
 01-.564-.41L8 2.694v.001z" fill-rule="evenodd"></path>
</svg><span class="d-inline" data-view-component="true">
          Star
</span> <span aria-label="9323 users starred this repository" class="Counter js-social-c
ount" data-pjax-replace="true" data-plural-suffix="users starred this repository" data-s
ingular-suffix="user starred this repository" data-turbo-replace="true" data-view-compon
ent="true" id="repo-stars-counter-star" title="9,323">9.3k</span>
</a> <button aria-label="You must be signed in to add this repository to a list" class
="btn-sm btn BtnGroup-item px-2" data-view-component="true" disabled="disabled" type="bu
tton"> <svg aria-hidden="true" class="octicon octicon-triangle-down" data-view-component
="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.427 7.427l3.396 3.396a.25.25 0 00.354 0l3.396-3.396A.25.25 0 0011.396 7H4.60
4a.25.25 0 00-.177.427z"></path>
</svg>
</button></div>
</div>
</div>
</div>
<nav aria-label="Repository menu" class="tabnav px-3 mb-0" data-view-component="true">
<ul class="tabnav-tabs" data-view-component="true">
<li class="d-inline-flex" data-view-component="true">
<a aria-current="true" class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_typ
e":"explore.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITO
RY","click_visual_representation":"CODE_TAB","actor_id":null,"record_id":174164624,"orig
inating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="3ec
c54b9ac9f4945129714feab55a2f41e3e25a3f46a88e4e6b2e9ad747df4ca" data-turbo="false" data-v
iew-component="true" href="/metafizzy/zdog" id="code-tab-174164624">
<svg aria-hidden="true" class="octicon octicon-code color-fg-default" data-view-componen
t="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.72 3.22a.75.75 0 011.06 1.06L2.06 8l3.72 3.72a.75.75 0 11-1.06 1.06L.47 8.53
a.75.75 0 010-1.06l4.25-4.25zm6.56 0a.75.75 0 10-1.06 1.06L13.94 8l-3.72 3.72a.75.75 0 1
01.06 1.06l4.25-4.25a.75.75 0 000-1.06l-4.25-4.25z" fill-rule="evenodd"></path>
</svg> Code


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_ISSUES","click_visual
_representation":"ISSUES_TAB","actor_id":null,"record_id":174164624,"originating_url":"h
```

```
ttps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="09cde2ab32c55d06f4
4361a914e1a31736c1b91f8a3f168ab84518ae90231a68" data-turbo="false" data-view-component
="true" href="/metafizzy/zdog/issues" id="issues-tab-174164624">
<svg aria-hidden="true" class="octicon octicon-issue-opened color-fg-muted" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 9.5a1.5 1.5 0 100-3 1.5 1.5 0 000 3z"></path><path d="M8 0a8 8 0 100 16A8 8
 0 008 0zM1.5 8a6.5 6.5 0 1113 0 6.5 6.5 0 01-13 0z" fill-rule="evenodd"></path>
</svg> Issues


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_PULL_REQUESTS","click
_visual_representation":"PULL_REQUESTS_TAB","actor_id":null,"record_id":174164624,"origi
nating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="9bb6
9fe8bd1d8fc2d0408ab15424ddf452494367422ff294c5a1e0826c130f34" data-turbo="false" data-vi
ew-component="true" href="/metafizzy/zdog/pulls" id="pull-requests-tab-174164624">
<svg aria-hidden="true" class="octicon octicon-git-pull-request color-fg-muted" data-vie
w-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M7.177 3.073L9.573.677A.25.25 0 0110 .854v4.792a.25.25 0 01-.427.177L7.177 3.42
7a.25.25 0 010-.354zM3.75 2.5a.75.75 0 100 1.5.75.75 0 000-1.5zm-2.25.75a2.25 2.25 0 113
 2.122v5.256a2.251 2.251 0 11-1.5 0V5.372A2.25 2.25 0 011.5 3.25zM11 2.5h-1V4h1a1 1 0 01
1 1v5.628a2.251 2.251 0 101.5 0V5A2.5 2.5 0 0011 2.5zm1 10.25a.75.75 0 111.5 0 .75.75 0
 01-1.5 0zM3.75 12a.75.75 0 100 1.5.75.75 0 000-1.5z" fill-rule="evenodd"></path>
</svg> Pull requests


</a></li>
</ul>
</nav>
<div class="color-bg-default rounded-bottom-2">
<div class="px-3 pt-3">
<p class="color-fg-muted mb-0"><div>Flat, round, designer-friendly pseudo-3D engine for
 canvas &amp; SVG</div></p>
</div>
<div class="d-flex flex-wrap border-bottom color-border-muted px-3 pt-2 pb-2">
<a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explore.cli
ck","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visual_re
presentation":"TOPIC_TAG","actor_id":null,"record_id":123,"originating_url":"https://git
hub.com/topics/3d","user_id":null}}' data-hydro-click-hmac="fd9948dfa42409669662033df52c
488e925d4f3d90c6fe8136f3e6020bb49ffe" data-view-component="true" href="/topics/svg" titl
e="Topic: svg">
            svg
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":9049,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="0694e7e822f74b8a606df
97d0cb6572a660b366fa0697b2001a01371c72f3bd2" data-view-component="true" href="/topics/ca
nvas" title="Topic: canvas">
            canvas
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":238400,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="028a08f740516273aa7f
05a2f5db3c450593017549ffa99920f497664d796dbe" data-view-component="true" href="/topics/3
d" title="Topic: 3d">
            3d
</a> </div>
<div class="p-3">
<ul class="d-flex f6 list-style-none color-fg-muted">
<li class="mr-4">
            Updated
            <relative-time class="no-wrap" datetime="2022-01-22T15:00:52Z">Jan 22, 2022
</relative-time>
</li>
```

```html
<li class="mr-4">
<span class="f6 my-1 ml-0">
<span class="repo-language-color" style="background-color: #f1e05a"></span>
<span itemprop="programmingLanguage">JavaScript</span>
</span>
</li>
</ul>
</div>
</div>
</article>
<article class="border rounded color-shadow-small color-bg-subtle my-4">
<div class="px-3">
<div class="d-flex flex-justify-between my-3">
<div class="d-flex flex-auto">
<span style="margin-top:2px">
<svg aria-hidden="true" class="octicon octicon-repo color-fg-muted mr-2" data-view-compo
nent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M2 2.5A2.5 2.5 0 014.5 0h8.75a.75.75 0 01.75.75v12.5a.75.75 0 01-.75.75h-2.5a.7
5.75 0 110-1.5h1.75v-2h-8a1 1 0 00-.714 1.7.75.75 0 01-1.072 1.05A2.495 2.495 0 012 11.5
v-9zm10.5-1V9h-8c-.356 0-.694.074-1 .208V2.5a1 1 0 011-1h8zM5 12.25v3.25a.25.25 0 00.4.2
l1.45-1.087a.25.25 0 01.3 0L8.6 15.7a.25.25 0 00.4-.2v-3.25a.25.25 0 00-.25-.25h-3.5a.2
5.25 0 00-.25.25z" fill-rule="evenodd"></path>
</svg>
</span>
<h3 class="f3 color-fg-muted text-normal lh-condensed">
<a data-hydro-click='{"event_type":"explore.click","payload":{"click_context":"REPOSITOR
Y_CARD","click_target":"OWNER","click_visual_representation":"REPOSITORY_OWNER_HEADIN
G","actor_id":null,"record_id":54716382,"originating_url":"https://github.com/topics/3
d","user_id":null}}' data-hydro-click-hmac="61f9f002cf1a4e74bf16f253674df30f6d7e65ee4900
647326a173ccb8f31afe" data-turbo="false" data-view-component="true" href="/CesiumGS">
            CesiumGS
</a>          /
         <a class="text-bold wb-break-word" data-hydro-click='{"event_type":"explore.cl
ick","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY","click_vis
ual_representation":"REPOSITORY_NAME_HEADING","actor_id":null,"record_id":3606738,"origi
nating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="415c
cd1ea052027e4073ace6132657d6ac12d43cea98b66453bbcdbed555faf5" data-turbo="false" data-vi
ew-component="true" href="/CesiumGS/cesium">
            cesium
</a> </h3>
</div>
<div class="d-flex flex-items-center ml-3">
<div class="BtnGroup d-flex" data-view-component="true">
<a aria-label="You must be signed in to star a repository" class="tooltipped tooltipped-
s btn-sm btn BtnGroup-item color-bg-default" data-hydro-click='{"event_type":"authentica
tion.click","payload":{"location_in_page":"star button","repository_id":3606738,"auth_ty
pe":"LOG_IN","originating_url":"https://github.com/topics/3d","user_id":null}}' data-hyd
ro-click-hmac="c3004fb3aa695f94b0fc049032c4cf67205edb81e9c7e120e3085e9a8fa6d621" data-vi
ew-component="true" href="/login?return_to=%2FCesiumGS%2Fcesium" rel="nofollow"> <svg ar
ia-hidden="true" class="octicon octicon-star v-align-text-bottom d-inline-block mr-2" da
ta-view-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 .25a.75.75 0 01.673.418l1.882 3.815 4.21.612a.75.75 0 01.416 1.279l-3.046 2.
97.719 4.192a.75.75 0 01-1.088.791L8 12.347l-3.766 1.98a.75.75 0 01-1.088-.79l.72-4.194
L.818 6.374a.75.75 0 01.416-1.28l4.21-.611L7.327.668A.75.75 0 018 .25zm0 2.445L6.615 5.5
a.75.75 0 01-.564.41l-3.097.45 2.24 2.184a.75.75 0 01.216.664l-.528 3.084 2.769-1.456a.7
5.75 0 01.698 0l2.77 1.456-.53-3.084a.75.75 0 01.216-.664l2.24-2.183-3.096-.45a.75.75 0
 01-.564-.41L8 2.694v.001z" fill-rule="evenodd"></path>
</svg><span class="d-inline" data-view-component="true">
            Star
</span> <span aria-label="9134 users starred this repository" class="Counter js-social-c
ount" data-pjax-replace="true" data-plural-suffix="users starred this repository" data-s
ingular-suffix="user starred this repository" data-turbo-replace="true" data-view-compon
ent="true" id="repo-stars-counter-star" title="9,134">9.1k</span>
</a> <button aria-label="You must be signed in to add this repository to a list" class
="btn-sm btn BtnGroup-item px-2" data-view-component="true" disabled="disabled" type="bu
tton"> <svg aria-hidden="true" class="octicon octicon-triangle-down" data-view-component
```

```html
="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.427 7.427l3.396 3.396a.25.25 0 00.354 0l3.396-3.396A.25.25 0 0011.396 7H4.60
4a.25.25 0 00-.177.427z"></path>
</svg>
</button></div>
</div>
</div>
</div>
<nav aria-label="Repository menu" class="tabnav px-3 mb-0" data-view-component="true">
<ul class="tabnav-tabs" data-view-component="true">
<li class="d-inline-flex" data-view-component="true">
<a aria-current="true" class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_typ
e":"explore.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITO
RY","click_visual_representation":"CODE_TAB","actor_id":null,"record_id":3606738,"origin
ating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="4c8cb
7a99ca743e899b0c933e96912b1cd3873b6e87735388182a654b547ba3c" data-turbo="false" data-vie
w-component="true" href="/CesiumGS/cesium" id="code-tab-3606738">
<svg aria-hidden="true" class="octicon octicon-code color-fg-default" data-view-componen
t="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.72 3.22a.75.75 0 011.06 1.06L2.06 8l3.72 3.72a.75.75 0 11-1.06 1.06L.47 8.53
a.75.75 0 010-1.06l4.25-4.25zm6.56 0a.75.75 0 10-1.06 1.06L13.94 8l-3.72 3.72a.75.75 0 1
01.06 1.06l4.25-4.25a.75.75 0 000-1.06l-4.25-4.25z" fill-rule="evenodd"></path>
</svg> Code


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_ISSUES","click_visual
_representation":"ISSUES_TAB","actor_id":null,"record_id":3606738,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="fb5ab71f7ef02da590c3
a8899aa8cd6a21d84591251538314290ccdbaa7a0124" data-turbo="false" data-view-component="tr
ue" href="/CesiumGS/cesium/issues" id="issues-tab-3606738">
<svg aria-hidden="true" class="octicon octicon-issue-opened color-fg-muted" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 9.5a1.5 1.5 0 100-3 1.5 1.5 0 000 3z"></path><path d="M8 0a8 8 0 100 16A8 8
 0 008 0zM1.5 8a6.5 6.5 0 1113 0 6.5 6.5 0 01-13 0z" fill-rule="evenodd"></path>
</svg> Issues


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_PULL_REQUESTS","click
_visual_representation":"PULL_REQUESTS_TAB","actor_id":null,"record_id":3606738,"origina
ting_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="afe284
fbfbc188b42e2947b1294ffd07f2c96a1e93fe732e42e00ce132e30bd3" data-turbo="false" data-view
-component="true" href="/CesiumGS/cesium/pulls" id="pull-requests-tab-3606738">
<svg aria-hidden="true" class="octicon octicon-git-pull-request color-fg-muted" data-vie
w-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M7.177 3.073L9.573.677A.25.25 0 0110 .854v4.792a.25.25 0 01-.427.177L7.177 3.42
7a.25.25 0 010-.354zM3.75 2.5a.75.75 0 100 1.5.75.75 0 000-1.5zm-2.25.75a2.25 2.25 0 113
 2.122v5.256a2.251 2.251 0 11-1.5 0V5.372A2.25 2.25 0 011.5 3.25zM11 2.5h-1V4h1a1 1 0 01
1 1v5.628a2.251 2.251 0 101.5 0V5A2.5 2.5 0 0011 2.5zm1 10.25a.75.75 0 111.5 0 .75.75 0
 01-1.5 0zM3.75 12a.75.75 0 100 1.5.75.75 0 000-1.5z" fill-rule="evenodd"></path>
</svg> Pull requests


</a></li>
</ul>
</nav>
<div class="color-bg-default rounded-bottom-2">
<div class="px-3 pt-3">
<p class="color-fg-muted mb-0"><div>An open-source JavaScript library for world-class 3D
 globes and maps <g-emoji alias="earth_americas" class="g-emoji" fallback-src="https://g
ithub.githubassets.com/images/icons/emoji/unicode/1f30e.png">🌎</g-emoji></div></p>
```

```html
</div>
<div class="d-flex flex-wrap border-bottom color-border-muted px-3 pt-2 pb-2">
<a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explore.cli
ck","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visual_re
presentation":"TOPIC_TAG","actor_id":null,"record_id":2119,"originating_url":"https://gi
thub.com/topics/3d","user_id":null}}' data-hydro-click-hmac="d2e607f9d7b25ee5a5f68ce176f
ebce6c2f1236e5bf9ca64fdb5da5a01a19767" data-view-component="true" href="/topics/webgl" t
itle="Topic: webgl">
            webgl
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":13945,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="b7f32ac8be802a2a32473
6dc80bdfaf64373b60fac0ca40ba744cf74fcf7f8c1" data-view-component="true" href="/topics/ge
ospatial" title="Topic: geospatial">
            geospatial
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":20578,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="9d92ad212f7b988b7fe7b
836cc5b6e54694e0fc7a2ad24bb2203dab085152988" data-view-component="true" href="/topics/gi
s" title="Topic: gis">
            gis
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":23104,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="eaed3d3314b518afa77bb
7734833f13f0f0598498f9a334ed460abcac288919e" data-view-component="true" href="/topics/ce
sium" title="Topic: cesium">
            cesium
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":154134,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="d04fc9754926d004d8bf
b7a828932a3cb42758a96e13b75cb1ee625378fc2f49" data-view-component="true" href="/topics/c
zml" title="Topic: czml">
            czml
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":184411,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="4e105e649a2219092100
8d17e1a51a8cd2db79395c39b892dd674c4fa85a5439" data-view-component="true" href="/topics/g
ltf" title="Topic: gltf">
            gltf
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":238400,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="028a08f740516273aa7f
05a2f5db3c450593017549ffa99920f497664d796dbe" data-view-component="true" href="/topics/3
d" title="Topic: 3d">
            3d
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":317014,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="4d06c1e64d841bd0fb6c
b2cbc8624645007d527326b361e23abbc4f32538c3e9" data-view-component="true" href="/topics/3
d-globe" title="Topic: 3d-globe">
            3d-globe
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":505752,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="fc7c27b02a820f2a915b
f8d09d6252dabeb36d294b079bc890eac4d15e8f8a8b" data-view-component="true" href="/topics/3
d-tiles" title="Topic: 3d-tiles">
            3d-tiles
</a> </div>
```

```html
<div class="p-3">
<ul class="d-flex f6 list-style-none color-fg-muted">
<li class="mr-4">
            Updated
            <relative-time class="no-wrap" datetime="2022-08-29T19:20:36Z">Aug 29, 2022
</relative-time>
</li>
<li class="mr-4">
<span class="f6 my-1 ml-0">
<span class="repo-language-color" style="background-color: #f1e05a"></span>
<span itemprop="programmingLanguage">JavaScript</span>
</span>
</li>
</ul>
</div>
</div>
</article>
<article class="border rounded color-shadow-small color-bg-subtle my-4">
<div class="px-3">
<div class="d-flex flex-justify-between my-3">
<div class="d-flex flex-auto">
<span style="margin-top:2px">
<svg aria-hidden="true" class="octicon octicon-repo color-fg-muted mr-2" data-view-compo
nent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M2 2.5A2.5 2.5 0 014.5 0h8.75a.75.75 0 01.75.75v12.5a.75.75 0 01-.75.75h-2.5a.7
5.75 0 110-1.5h1.75v-2h-8a1 1 0 00-.714 1.7.75.75 0 01-1.072 1.05A2.495 2.495 0 012 11.5
v-9zm10.5-1V9h-8c-.356 0-.694.074-1 .208V2.5a1 1 0 011-1h8zM5 12.25v3.25a.25.25 0 00.4.2
l1.45-1.087a.25.25 0 01.3 0L8.6 15.7a.25.25 0 00.4-.2v-3.25a.25.25 0 00-.25-.25h-3.5a.2
5.25 0 00-.25.25z" fill-rule="evenodd"></path>
</svg>
</span>
<h3 class="f3 color-fg-muted text-normal lh-condensed">
<a data-hydro-click='{"event_type":"explore.click","payload":{"click_context":"REPOSITOR
Y_CARD","click_target":"OWNER","click_visual_representation":"REPOSITORY_OWNER_HEADIN
G","actor_id":null,"record_id":16217333,"originating_url":"https://github.com/topics/3
d","user_id":null}}' data-hydro-click-hmac="0077f42015645d900471e0cf0ce8a3d643d649d4fa3f
f4d0b3fca48249c1b695" data-turbo="false" data-view-component="true" href="/timzhang642">
            timzhang642
</a>          /
        <a class="text-bold wb-break-word" data-hydro-click='{"event_type":"explore.cl
ick","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY","click_vis
ual_representation":"REPOSITORY_NAME_HEADING","actor_id":null,"record_id":100120455,"ori
ginating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="5a
c29541d56b0a4f137b3adb34578840be52d1f547359a52b3f4ac007241de29" data-turbo="false" data-
view-component="true" href="/timzhang642/3D-Machine-Learning">
            3D-Machine-Learning
</a> </h3>
</div>
<div class="d-flex flex-items-center ml-3">
<div class="BtnGroup d-flex" data-view-component="true">
<a aria-label="You must be signed in to star a repository" class="tooltipped tooltipped-
s btn-sm btn BtnGroup-item color-bg-default" data-hydro-click='{"event_type":"authentica
tion.click","payload":{"location_in_page":"star button","repository_id":100120455,"auth_
type":"LOG_IN","originating_url":"https://github.com/topics/3d","user_id":null}}' data-h
ydro-click-hmac="60a6c5e50f104f9782f487e99a6785b7d32628d2c89b7f03c77d4ed6287a90b3" data-
view-component="true" href="/login?return_to=%2Ftimzhang642%2F3D-Machine-Learning" rel
="nofollow"> <svg aria-hidden="true" class="octicon octicon-star v-align-text-bottom d-i
nline-block mr-2" data-view-component="true" height="16" version="1.1" viewbox="0 0 16 1
6" width="16">
<path d="M8 .25a.75.75 0 01.673.41811.882 3.815 4.21.612a.75.75 0 01.416 1.279l-3.046 2.
97.719 4.192a.75.75 0 01-1.088.791L8 12.347l-3.766 1.98a.75.75 0 01-1.088-.79l.72-4.194
L.818 6.374a.75.75 0 01.416-1.28l4.21-.611L7.327.668A.75.75 0 018 .25zm0 2.445L6.615 5.5
a.75.75 0 01-.564.41l-3.097.45 2.24 2.184a.75.75 0 01.216.664l-.528 3.084 2.769-1.456a.7
5.75 0 01.698 0l2.77 1.456-.53-3.084a.75.75 0 01.216-.66l2.24-2.183-3.096-.45a.75.75 0
01-.564-.41L8 2.694v.001z" fill-rule="evenodd"></path>
</svg><span class="d-inline" data-view-component="true">
```

          Star
 <span aria-label="8272 users starred this repository" class="Counter js-social-c
ount" data-pjax-replace="true" data-plural-suffix="users starred this repository" data-s
ingular-suffix="user starred this repository" data-turbo-replace="true" data-view-compon
ent="true" id="repo-stars-counter-star" title="8,272">8.3k
 <button aria-label="You must be signed in to add this repository to a list" class
="btn-sm btn BtnGroup-item px-2" data-view-component="true" disabled="disabled" type="bu
tton"> <svg aria-hidden="true" class="octicon octicon-triangle-down" data-view-component
="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.427 7.427l3.396 3.396a.25.25 0 00.354 0l3.396-3.396A.25.25 0 0011.396 7H4.60
4a.25.25 0 00-.177.427z"></path>
</svg>
</button></div>
</div>
</div>
</div>
<nav aria-label="Repository menu" class="tabnav px-3 mb-0" data-view-component="true">
<ul class="tabnav-tabs" data-view-component="true">
<li class="d-inline-flex" data-view-component="true">
<a aria-current="true" class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_typ
e":"explore.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITO
RY","click_visual_representation":"CODE_TAB","actor_id":null,"record_id":100120455,"orig
inating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="732
c087db112ec271615bc666976534c417cccfc734b657907be45364a24303b" data-turbo="false" data-v
iew-component="true" href="/timzhang642/3D-Machine-Learning" id="code-tab-100120455">
<svg aria-hidden="true" class="octicon octicon-code color-fg-default" data-view-componen
t="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.72 3.22a.75.75 0 011.06 1.06L2.06 8l3.72 3.72a.75.75 0 11-1.06 1.06L.47 8.53
a.75.75 0 010-1.06l4.25-4.25zm6.56 0a.75.75 0 10-1.06 1.06L13.94 8l-3.72 3.72a.75.75 0 1
01.06 1.06l4.25-4.25a.75.75 0 000-1.06l-4.25-4.25z" fill-rule="evenodd"></path>
</svg> Code

<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_ISSUES","click_visual
_representation":"ISSUES_TAB","actor_id":null,"record_id":100120455,"originating_url":"h
ttps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="226c7dc4bc2938dcd0
97c1f030b6792d7b01c3dbbdb4c02cb52f1ca48f0efa4f" data-turbo="false" data-view-component
="true" href="/timzhang642/3D-Machine-Learning/issues" id="issues-tab-100120455">
<svg aria-hidden="true" class="octicon octicon-issue-opened color-fg-muted" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 9.5a1.5 1.5 0 100-3 1.5 1.5 0 000 3z"></path><path d="M8 0a8 8 0 100 16A8 8
 0 008 0zM1.5 8a6.5 6.5 0 1113 0 6.5 6.5 0 01-13 0z" fill-rule="evenodd"></path>
</svg> Issues

<li class="d-inline-flex" data-view-component="true">
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_visual_representation":"PULL_REQUESTS_TAB","actor_id":null,"record_id":100120455,"origi
nating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="3909
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ew-component="true" href="/timzhang642/3D-Machine-Learning/pulls" id="pull-requests-tab-
100120455">
<svg aria-hidden="true" class="octicon octicon-git-pull-request color-fg-muted" data-vie
w-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M7.177 3.073L9.573.677A.25.25 0 0110 .854v4.792a.25.25 0 01-.427.177L7.177 3.42
7a.25.25 0 010-.354zM3.75 2.5a.75.75 0 100 1.5.75.75 0 000-1.5zm-2.25.75a2.25 2.25 0 113
 2.122v5.256a2.251 2.251 0 11-1.5 0V5.372A2.25 2.25 0 011.5 3.25zM11 2.5h-1V4h1a1 1 0 01
1 1v5.628a2.251 2.251 0 101.5 0V5A2.5 2.5 0 0011 2.5zm1 10.25a.75.75 0 111.5 0 .75.75 0
 01-1.5 0zM3.75 12a.75.75 0 100 1.5.75.75 0 000-1.5z" fill-rule="evenodd"></path>
</svg> Pull requests

```html
</a></li>
</ul>
</nav>
<div class="color-bg-default rounded-bottom-2">
<div class="px-3 pt-3">
<p class="color-fg-muted mb-0"><div>A resource repository for 3D machine learning</div>
</p>
</div>
<div class="d-flex flex-wrap border-bottom color-border-muted px-3 pt-2 pb-2">
<a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explore.cli
ck","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visual_re
presentation":"TOPIC_TAG","actor_id":null,"record_id":2169,"originating_url":"https://gi
thub.com/topics/3d","user_id":null}}' data-hydro-click-hmac="87e01227589b9a4953e509a62a1
245ff1aca4b0d1416cd9a99b6f65234f45a0a" data-view-component="true" href="/topics/machine-
learning" title="Topic: machine-learning">
            machine-learning
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":13757,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="5ed14ac157616f6a0ee0b
8087ebd59e776ee6f8ff1ce8e8102c781cfc0d65cfc" data-view-component="true" href="/topics/vo
xel" title="Topic: voxel">
            voxel
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":22091,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="f1fd1fb34a4bb358d1aa3
2bbd464cbddd356956b005f4a75f3b976253c61d73e" data-view-component="true" href="/topics/po
int-cloud" title="Topic: point-cloud">
            point-cloud
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":28258,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="2d4a11a8a8ae7b2e8e35a
2332fa3d63ab19a99be38e727101ecb442a794a0226" data-view-component="true" href="/topics/pr
imitives" title="Topic: primitives">
            primitives
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":35539,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="407ba365806269be1326a
2bb2eb7aab37a7a0ad7d7472abd412b1392b3c3ed55" data-view-component="true" href="/topics/me
sh" title="Topic: mesh">
            mesh
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":44842,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="72e0d2d1428520e303f3d
b2fba162efdff8efbfbd2e4da343f75400930506967" data-view-component="true" href="/topics/ne
ural-networks" title="Topic: neural-networks">
            neural-networks
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":114317,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="e0c8f9e29c891850cd39
45b3d6939a04ef1b569de4bef7059eadfd7e3ab26c35" data-view-component="true" href="/topics/p
apers" title="Topic: papers">
            papers
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":188740,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="bbd3f47c393f8cb6956b
e4e1a1ddcf02798c4f1e320424e10e8cc652ff5def88" data-view-component="true" href="/topics/c
onstructive-solid-geometries" title="Topic: constructive-solid-geometries">
            constructive-solid-geometries
```

```html
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":238400,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="028a08f740516273aa7f
05a2f5db3c450593017549ffa99920f497664d796dbe" data-view-component="true" href="/topics/3
d" title="Topic: 3d">
              3d
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":269444,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="ee3303d4bc3a2dabe176
0495de45e4e2e0b106576f14c21c91afe2d27bd226f4" data-view-component="true" href="/topics/3
d-reconstruction" title="Topic: 3d-reconstruction">
              3d-reconstruction
</a> </div>
<div class="p-3">
<ul class="d-flex f6 list-style-none color-fg-muted">
<li class="mr-4">
              Updated
              <relative-time class="no-wrap" datetime="2022-06-25T07:18:45Z">Jun 25, 2022
</relative-time>
</li>
</ul>
</div>
</div>
</article>
<article class="border rounded color-shadow-small color-bg-subtle my-4">
<a class="overflow-hidden flex-items-center rounded-top-2 color-border-muted border-bott
om d-flex position-relative" data-hydro-click='{"event_type":"explore.click","payload":
{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY","click_visual_representat
ion":"REPOSITORY_IMAGE","actor_id":null,"record_id":75413130,"originating_url":"https://
github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="decc886be086aff8b1d369fde
840700b486503e30e7a44cadd34c8aad0b545c2" data-turbo="false" data-view-component="true" h
ref="/isl-org/Open3D" style="max-height:275px">
<img alt="Open3D" class="d-block width-full" loading="lazy" src="https://repository-imag
es.githubusercontent.com/75413130/95ff7f3a-1980-4abc-851a-bbc7286b8892"/>
</a>
<div class="px-3">
<div class="d-flex flex-justify-between my-3">
<div class="d-flex flex-auto">
<span style="margin-top:2px">
<svg aria-hidden="true" class="octicon octicon-repo color-fg-muted mr-2" data-view-compo
nent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M2 2.5A2.5 2.5 0 014.5 0h8.75a.75.75 0 01.75.75v12.5a.75.75 0 01-.75.75h-2.5a.7
5.75 0 110-1.5h1.75v-2h-8a1 1 0 00-.714 1.7.75.75 0 01-1.072 1.05A2.495 2.495 0 012 11.5
v-9zm10.5-1V9h-8c-.356 0-.694.074-1 .208V2.5a1 1 0 011-1h8zM5 12.25v3.25a.25.25 0 00.4.2
l1.45-1.087a.25.25 0 01.3 0L8.6 15.7a.25.25 0 00.4-.2v-3.25a.25.25 0 00-.25-.25h-3.5a.2
5.25 0 00-.25.25z" fill-rule="evenodd"></path>
</svg>
</span>
<h3 class="f3 color-fg-muted text-normal lh-condensed">
<a data-hydro-click='{"event_type":"explore.click","payload":{"click_context":"REPOSITOR
Y_CARD","click_target":"OWNER","click_visual_representation":"REPOSITORY_OWNER_HEADIN
G","actor_id":null,"record_id":23507030,"originating_url":"https://github.com/topics/3
d","user_id":null}}' data-hydro-click-hmac="2690981e9e9eeb03ddf9f0f49f0c3167881395f2850f
1e2b8012d64f5db4088d" data-turbo="false" data-view-component="true" href="/isl-org">
              isl-org
</a>         /
          <a class="text-bold wb-break-word" data-hydro-click='{"event_type":"explore.cl
ick","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY","click_vis
ual_representation":"REPOSITORY_NAME_HEADING","actor_id":null,"record_id":75413130,"orig
inating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="337
6b3eb05aaf87cba8d79a982e9ed5940507b1d0c89a16fb29986e1bdd5e302" data-turbo="false" data-v
iew-component="true" href="/isl-org/Open3D">
              Open3D
</a> </h3>
```

```html
</div>
<div class="d-flex flex-items-center ml-3">
<div class="BtnGroup d-flex" data-view-component="true">
<a aria-label="You must be signed in to star a repository" class="tooltipped tooltipped-
s btn-sm btn BtnGroup-item color-bg-default" data-hydro-click='{"event_type":"authentica
tion.click","payload":{"location_in_page":"star button","repository_id":75413130,"auth_t
ype":"LOG_IN","originating_url":"https://github.com/topics/3d","user_id":null}}' data-hy
dro-click-hmac="db2314848e30b2e0c0dcc270cfa75e87737fe0604291e56998a683f5bbe749a7" data-v
iew-component="true" href="/login?return_to=%2Fisl-org%2FOpen3D" rel="nofollow"> <svg ar
ia-hidden="true" class="octicon octicon-star v-align-text-bottom d-inline-block mr-2" da
ta-view-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 .25a.75.75 0 01.673.418l1.882 3.815 4.21.612a.75.75 0 01.416 1.279l-3.046 2.
97.719 4.192a.75.75 0 01-1.088.791L8 12.347l-3.766 1.98a.75.75 0 01-1.088-.79l.72-4.194
L.818 6.374a.75.75 0 01.416-1.28l4.21-.611L7.327.668A.75.75 0 018 .25zm0 2.445L6.615 5.5
a.75.75 0 01-.564.41l-3.097.45 2.24 2.184a.75.75 0 01.216.664l-.528 3.084 2.769-1.456a.7
5.75 0 01.698 0l2.77 1.456-.53-3.084a.75.75 0 01.216-.664l2.24-2.183-3.096-.45a.75.75 0
 01-.564-.41L8 2.694v.001z" fill-rule="evenodd"></path>
</svg><span class="d-inline" data-view-component="true">
          Star
</span> <span aria-label="7305 users starred this repository" class="Counter js-social-c
ount" data-pjax-replace="true" data-plural-suffix="users starred this repository" data-s
ingular-suffix="user starred this repository" data-turbo-replace="true" data-view-compon
ent="true" id="repo-stars-counter-star" title="7,305">7.3k</span>
</a> <button aria-label="You must be signed in to add this repository to a list" class
="btn-sm btn BtnGroup-item px-2" data-view-component="true" disabled="disabled" type="bu
tton"> <svg aria-hidden="true" class="octicon octicon-triangle-down" data-view-component
="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.427 7.427l3.396 3.396a.25.25 0 00.354 0l3.396-3.396A.25.25 0 0011.396 7H4.60
4a.25.25 0 00-.177.427z"></path>
</svg>
</button></div>
</div>
</div>
</div>
<nav aria-label="Repository menu" class="tabnav px-3 mb-0" data-view-component="true">
<ul class="tabnav-tabs" data-view-component="true">
<li class="d-inline-flex" data-view-component="true">
<a aria-current="true" class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_typ
e":"explore.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITO
RY","click_visual_representation":"CODE_TAB","actor_id":null,"record_id":75413130,"origi
nating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="b99d
52687682d8ba8c7791146d1aa19c41be16b452f5506ea843e42e9b2f11eb" data-turbo="false" data-vi
ew-component="true" href="/isl-org/Open3D" id="code-tab-75413130">
<svg aria-hidden="true" class="octicon octicon-code color-fg-default" data-view-componen
t="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.72 3.22a.75.75 0 011.06 1.06L2.06 8l3.72 3.72a.75.75 0 11-1.06 1.06L.47 8.53
a.75.75 0 010-1.06l4.25-4.25zm6.56 0a.75.75 0 10-1.06 1.06L13.94 8l-3.72 3.72a.75.75 0 1
01.06 1.06l4.25-4.25a.75.75 0 000-1.06l-4.25-4.25z" fill-rule="evenodd"></path>
</svg> Code


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_ISSUES","click_visual
_representation":"ISSUES_TAB","actor_id":null,"record_id":75413130,"originating_url":"ht
tps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="d51e0c844dd17572bb6
91845710a1304180d69e79bbe0158b2afd1c25e8d94bc" data-turbo="false" data-view-component="t
rue" href="/isl-org/Open3D/issues" id="issues-tab-75413130">
<svg aria-hidden="true" class="octicon octicon-issue-opened color-fg-muted" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 9.5a1.5 1.5 0 100-3 1.5 1.5 0 000 3z"></path><path d="M8 0a8 8 0 100 16A8 8
 0 008 0zM1.5 8a6.5 6.5 0 1113 0 6.5 6.5 0 01-13 0z" fill-rule="evenodd"></path>
</svg> Issues
```

```html
</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_PULL_REQUESTS","click
_visual_representation":"PULL_REQUESTS_TAB","actor_id":null,"record_id":75413130,"origin
ating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="29ff0
c1f827144377f6ce4c419d288e6ba2dc65991aa74e2cdd4f1ad5c440931" data-turbo="false" data-vie
w-component="true" href="/isl-org/Open3D/pulls" id="pull-requests-tab-75413130">
<svg aria-hidden="true" class="octicon octicon-git-pull-request color-fg-muted" data-vie
w-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M7.177 3.073L9.573.677A.25.25 0 0110 .854v4.792a.25.25 0 01-.427.177L7.177 3.42
7a.25.25 0 010-.354zM3.75 2.5a.75.75 0 100 1.5.75.75 0 000-1.5zm-2.25.75a2.25 2.25 0 113
 2.122v5.256a2.251 2.251 0 11-1.5 0V5.372A2.25 2.25 0 011.5 3.25zM11 2.5h-1V4h1a1 1 0 01
1 1v5.628a2.251 2.251 0 101.5 0V5A2.5 2.5 0 0011 2.5zm1 10.25a.75.75 0 111.5 0 .75.75 0
 01-1.5 0zM3.75 12a.75.75 0 100 1.5.75.75 0 000-1.5z" fill-rule="evenodd"></path>
</svg> Pull requests


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_DISCUSSIONS","click_v
isual_representation":"DISCUSSIONS_TAB","actor_id":null,"record_id":75413130,"originatin
g_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="33b40e9a4
63aacbf5c4d00787cf93689ed3a9ef8c5e6d106076e42129ced4a77" data-turbo="false" data-view-co
mponent="true" href="/isl-org/Open3D/discussions" id="discussions-tab-75413130">
<svg aria-hidden="true" class="octicon octicon-comment-discussion color-fg-muted" data-v
iew-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
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a.75.75 0 00-.53.22L3.5 11.44V9.25a.75.75 0 00-.75-.75h-1a.25.25 0 01-.25-.25v-5.5zM1.75
 1A1.75 1.75 0 000 2.75v5.5C0 9.216.784 10 1.75 10H2v1.543a1.457 1.457 0 002.487 1.03L7.
061 10h3.189A1.75 1.75 0 0012 8.25v-5.5A1.75 1.75 0 0010.25 1h-8.5zM14.5 4.75a.25.25 0 0
0-.25-.25h-.5a.75.75 0 110-1.5h.5c.966 0 1.75.784 1.75 1.75v5.5A1.75 1.75 0 0114.25 12H1
4v1.543a1.457 1.457 0 01-2.487 1.03L9.22 12.28a.75.75 0 111.06-1.06l2.22 2.22v-2.19a.75.
75 0 01.75-.75h1a.25.25 0 00.25-.25v-5.5z" fill-rule="evenodd"></path>
</svg> Discussions


</a></li>
</ul>
</nav>
<div class="color-bg-default rounded-bottom-2">
<div class="px-3 pt-3">
<p class="color-fg-muted mb-0"><div>Open3D: A Modern Library for 3D Data Processing</div
></p>
</div>
<div class="d-flex flex-wrap border-bottom color-border-muted px-3 pt-2 pb-2">
<a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explore.cli
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presentation":"TOPIC_TAG","actor_id":null,"record_id":22,"originating_url":"https://gith
ub.com/topics/3d","user_id":null}}' data-hydro-click-hmac="f92442ca5e589828fa0e854454c4c
415a6046073fa231f7cb0d8921b05c07409" data-view-component="true" href="/topics/visualizat
ion" title="Topic: visualization">
            visualization
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":84,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="be04bb3f99b96001c8d5d
f4567a7b76ee6a378775e20f4cbb3474b09327ca088" data-view-component="true" href="/topics/py
thon" title="Topic: python">
            python
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="87e01227589b9a4953e50
9a62a1245ff1aca4b0d1416cd9a99b6f65234f45a0a" data-view-component="true" href="/topics/ma
```

```
chine-learning" title="Topic: machine-learning">
            machine-learning
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":2221,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="72540557934dfd5e4fa4c
8de2b7683ef38cf485c2ef788242ceb52f3dc744820" data-view-component="true" href="/topics/ar
m" title="Topic: arm">
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</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":2298,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="b470531e7e3a385c737d9
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i" title="Topic: gui">
            gui
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="adc813d832197f96443bc
9ead9e362219f953f9cfdbceb7d210b485a57d17430" data-view-component="true" href="/topics/op
engl" title="Topic: opengl">
            opengl
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="e904e07fa8e0d57542653
ce8f2a688e7a101f7464a09c59717828a65d1797b41" data-view-component="true" href="/topics/cp
p" title="Topic: cpp">
            cpp
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="63144f67077dc0cac95bc
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nsorflow" title="Topic: tensorflow">
            tensorflow
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
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s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="f8863b254240da917bec7
bc68ee94187cb47731a85dd73c54816edecea4fbd4b" data-view-component="true" href="/topics/gp
u" title="Topic: gpu">
            gpu
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="517f6d4da5cec1ee4dfaf
e3eb3aa0f5dd7287c4404569367259665f587636917" data-view-component="true" href="/topics/re
ndering" title="Topic: rendering">
            rendering
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":13442,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="0d6ae46592545600a99c0
f4c621dc9f42e729579a898a01de9cc0333c4ec0871" data-view-component="true" href="/topics/co
mputer-graphics" title="Topic: computer-graphics">
            computer-graphics
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
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s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="29e44ab9ba6416528d0e0
dee30556875b603d2af39930eb1943f0f442a3a5629" data-view-component="true" href="/topics/cu
da" title="Topic: cuda">
            cuda
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
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s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="96572c2fb6a8da6bea044
95dc792165dfed6c3a89ab490f358cc165b4d4c9f4c" data-view-component="true" href="/topics/py
torch" title="Topic: pytorch">
              pytorch
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":39854,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="3a5b832b5f114d1dce692
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gistration" title="Topic: registration">
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":127904,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="131646d9046eaa06eb18
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econstruction" title="Topic: reconstruction">
              reconstruction
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":238400,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="028a08f740516273aa7f
05a2f5db3c450593017549ffa99920f497664d796dbe" data-view-component="true" href="/topics/3
d" title="Topic: 3d">
              3d
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":292042,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="315730879a7401058600
a1159366eb1141404c4d5bcfa6fab99bf368ea0cf823" data-view-component="true" href="/topics/o
dometry" title="Topic: odometry">
              odometry
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":369174,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="bb08c6d1c97fb6b923ce
c7050e5cde64263de84271813b82ee2d569a3050e2b1" data-view-component="true" href="/topics/p
ointcloud" title="Topic: pointcloud">
              pointcloud
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
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ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="fb6517cf1858d16fdb60
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esh-processing" title="Topic: mesh-processing">
              mesh-processing
 <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="9ea036f5fd7d2b3419df
10861755c2abaaae359be398527edac86280fe7ac3df" data-view-component="true" href="/topics/3
d-perception" title="Topic: 3d-perception">
              3d-perception
 </div>
<div class="p-3">
<ul class="d-flex f6 list-style-none color-fg-muted">
<li class="mr-4">
              Updated
              <relative-time class="no-wrap" datetime="2022-08-29T16:55:40Z">Aug 29, 2022
</relative-time>

<li class="mr-4">


```html
<span itemprop="programmingLanguage">C++</span>
</span>
</li>
</ul>
</div>
</div>
</article>
<article class="border rounded color-shadow-small color-bg-subtle my-4">
<div class="px-3">
<div class="d-flex flex-justify-between my-3">
<div class="d-flex flex-auto">
<span style="margin-top:2px">
<svg aria-hidden="true" class="octicon octicon-repo color-fg-muted mr-2" data-view-compo
nent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M2 2.5A2.5 2.5 0 014.5 0h8.75a.75.75 0 01.75.75v12.5a.75.75 0 01-.75.75h-2.5a.7
5.75 0 110-1.5h1.75v-2h-8a1 1 0 00-.714 1.7.75.75 0 01-1.072 1.05A2.495 2.495 0 012 11.5
v-9zm10.5-1V9h-8c-.356 0-.694.074-1 .208V2.5a1 1 0 011-1h8zM5 12.25v3.25a.25.25 0 00.4.2
l1.45-1.087a.25.25 0 01.3 0L8.6 15.7a.25.25 0 00.4-.2v-3.25a.25.25 0 00-.25-.25h-3.5a.2
5.25 0 00-.25.25z" fill-rule="evenodd"></path>
</svg>
</span>
<h3 class="f3 color-fg-muted text-normal lh-condensed">
<a data-hydro-click='{"event_type":"explore.click","payload":{"click_context":"REPOSITOR
Y_CARD","click_target":"OWNER","click_visual_representation":"REPOSITORY_OWNER_HEADIN
G","actor_id":null,"record_id":6295625,"originating_url":"https://github.com/topics/3
d","user_id":null}}' data-hydro-click-hmac="7220683d549511788160028424a94bb30c0e0deb6ed51
a32331c4c5a4f1344a62" data-turbo="false" data-view-component="true" href="/a1studmuffi
n">
            a1studmuffin
</a>        /
        <a class="text-bold wb-break-word" data-hydro-click='{"event_type":"explore.cl
ick","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY","click_vis
ual_representation":"REPOSITORY_NAME_HEADING","actor_id":null,"record_id":61088333,"orig
inating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="023
54cc3f2ad7480715b6a482b5f7f035bd5abedba1fc0faead1894e17a61820" data-turbo="false" data-v
iew-component="true" href="/a1studmuffin/SpaceshipGenerator">
            SpaceshipGenerator
</a> </h3>
</div>
<div class="d-flex flex-items-center ml-3">
<div class="BtnGroup d-flex" data-view-component="true">
<a aria-label="You must be signed in to star a repository" class="tooltipped tooltipped-
s btn-sm btn BtnGroup-item color-bg-default" data-hydro-click='{"event_type":"authentica
tion.click","payload":{"location_in_page":"star button","repository_id":61088333,"auth_t
ype":"LOG_IN","originating_url":"https://github.com/topics/3d","user_id":null}}' data-hy
dro-click-hmac="59f2dc2e1c5f18344ccef8830f993402b563d020f6698ef1266be3621212d9bb" data-v
iew-component="true" href="/login?return_to=%2Fa1studmuffin%2FSpaceshipGenerator" rel="n
ofollow"> <svg aria-hidden="true" class="octicon octicon-star v-align-text-bottom d-inli
ne-block mr-2" data-view-component="true" height="16" version="1.1" viewbox="0 0 16 16"
 width="16">
<path d="M8 .25a.75.75 0 01.673.41l1.882 3.815 4.21.612a.75.75 0 01.416 1.279l-3.046 2.
97.719 4.192a.75.75 0 01-1.088.791L8 12.347l-3.766 1.98a.75.75 0 01-1.088-.79l.72-4.194
L.818 6.374a.75.75 0 01.416-1.28l4.21-.611L7.327.668A.75.75 0 018 .25zm0 2.445L6.615 5.5
a.75.75 0 01-.564.41l-3.097.45 2.24 2.184a.75.75 0 01.216.664l-.528 3.084 2.769-1.456a.7
5.75 0 01.698 0l2.77 1.456-.53-3.084a.75.75 0 01.216-.664l2.24-2.183-3.096-.45a.75.75 0
 01-.564-.41L8 2.694v.001z" fill-rule="evenodd"></path>
</svg><span class="d-inline" data-view-component="true">
          Star
</span> <span aria-label="7200 users starred this repository" class="Counter js-social-c
ount" data-pjax-replace="true" data-plural-suffix="users starred this repository" data-s
ingular-suffix="user starred this repository" data-turbo-replace="true" data-view-compon
ent="true" id="repo-stars-counter-star" title="7,200">7.2k</span>
</a> <button aria-label="You must be signed in to add this repository to a list" class
="btn-sm btn BtnGroup-item px-2" data-view-component="true" disabled="disabled" type="bu
tton"> <svg aria-hidden="true" class="octicon octicon-triangle-down" data-view-component
="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
```

```html
<path d="M4.427 7.427l3.396 3.396a.25.25 0 00.354 0l3.396-3.396A.25.25 0 0011.396 7H4.60
4a.25.25 0 00-.177.427z"></path>
</svg>
</button></div>
</div>
</div>
</div>
<nav aria-label="Repository menu" class="tabnav px-3 mb-0" data-view-component="true">
<ul class="tabnav-tabs" data-view-component="true">
<li class="d-inline-flex" data-view-component="true">
<a aria-current="true" class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_typ
e":"explore.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITO
RY","click_visual_representation":"CODE_TAB","actor_id":null,"record_id":61088333,"origi
nating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="044c
94b120840916ff9a520871d58b94241e369540898281eb8774e9ca72f5e0" data-turbo="false" data-vi
ew-component="true" href="/a1studmuffin/SpaceshipGenerator" id="code-tab-61088333">
<svg aria-hidden="true" class="octicon octicon-code color-fg-default" data-view-componen
t="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.72 3.22a.75.75 0 011.06 1.06L2.06 8l3.72 3.72a.75.75 0 11-1.06 1.06L.47 8.53
a.75.75 0 010-1.06l4.25-4.25zm6.56 0a.75.75 0 10-1.06 1.06L13.94 8l-3.72 3.72a.75.75 0 1
01.06 1.06l4.25-4.25a.75.75 0 000-1.06l-4.25-4.25z" fill-rule="evenodd"></path>
</svg> Code


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_ISSUES","click_visual
_representation":"ISSUES_TAB","actor_id":null,"record_id":61088333,"originating_url":"ht
tps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="d7468a7631ff4fd4ba4
b294bcae31a0d544919bfdf26def10b17c6eb22a283f4" data-turbo="false" data-view-component="t
rue" href="/a1studmuffin/SpaceshipGenerator/issues" id="issues-tab-61088333">
<svg aria-hidden="true" class="octicon octicon-issue-opened color-fg-muted" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 9.5a1.5 1.5 0 100-3 1.5 1.5 0 000 3z"></path><path d="M8 0a8 8 0 100 16A8 8
 0 008 0zM1.5 8a6.5 6.5 0 1113 0 6.5 6.5 0 01-13 0z" fill-rule="evenodd"></path>
</svg> Issues


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
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_visual_representation":"PULL_REQUESTS_TAB","actor_id":null,"record_id":61088333,"origin
ating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="ae6c9
f02ca6fdbf03bf1708b72bd084ce2aa5cebc53dd34a3bb111855a9703ab" data-turbo="false" data-vie
w-component="true" href="/a1studmuffin/SpaceshipGenerator/pulls" id="pull-requests-tab-6
1088333">
<svg aria-hidden="true" class="octicon octicon-git-pull-request color-fg-muted" data-vie
w-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M7.177 3.073L9.573.677A.25.25 0 0110 .854v4.792a.25.25 0 01-.427.177L7.177 3.42
7a.25.25 0 010-.354zM3.75 2.5a.75.75 0 100 1.5.75.75 0 000-1.5zm-2.25.75a2.25 2.25 0 113
 2.122v5.256a2.251 2.251 0 11-1.5 0V5.372A2.25 2.25 0 011.5 3.25zM11 2.5h-1V4h1a1 1 0 01
1 1v5.628a2.251 2.251 0 101.5 0V5A2.5 2.5 0 0011 2.5zm1 10.25a.75.75 0 111.5 0 .75.75 0
 01-1.5 0zM3.75 12a.75.75 0 100 1.5.75.75 0 000-1.5z" fill-rule="evenodd"></path>
</svg> Pull requests


</a></li>
</ul>
</nav>
<div class="color-bg-default rounded-bottom-2">
<div class="px-3 pt-3">
<p class="color-fg-muted mb-0"><div>A Blender script to procedurally generate 3D spacesh
ips</div></p>
</div>
```

```html
<div class="d-flex flex-wrap border-bottom color-border-muted px-3 pt-2 pb-2">
<a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explore.cli
ck","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visual_re
presentation":"TOPIC_TAG","actor_id":null,"record_id":84,"originating_url":"https://gith
ub.com/topics/3d","user_id":null}}' data-hydro-click-hmac="be04bb3f99b96001c8d5df4567a7b
76ee6a378775e20f4cbb3474b09327ca088" data-view-component="true" href="/topics/python" ti
tle="Topic: python">
            python
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":11938,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="9eec445024df1259265fe
05dd611d8c4f1591f2b5f49d1958646aeee33a5a260" data-view-component="true" href="/topics/pr
ocedural-generation" title="Topic: procedural-generation">
            procedural-generation
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":12430,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="16a3dac000c66c59c35a5
3928b2779fcfd62db36f086e43dbf0041033b2b170a" data-view-component="true" href="/topics/bl
ender-scripts" title="Topic: blender-scripts">
            blender-scripts
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":17135,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="97ebb0c4cebe425821647
eff3f7686beaf57bc04e57bf7f5c65a193c70d10824" data-view-component="true" href="/topics/ga
me-development" title="Topic: game-development">
            game-development
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":238400,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="028a08f740516273aa7f
05a2f5db3c450593017549ffa99920f497664d796dbe" data-view-component="true" href="/topics/3
d" title="Topic: 3d">
            3d
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":249011,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="5f514470a10f1305dbea
71068d1b9c13ba8ac11b972b3d1c9ff5f2b0e4015463" data-view-component="true" href="/topics/s
paceship" title="Topic: spaceship">
            spaceship
</a> </div>
<div class="p-3">
<ul class="d-flex f6 list-style-none color-fg-muted">
<li class="mr-4">
            Updated
            <relative-time class="no-wrap" datetime="2022-01-19T23:38:53Z">Jan 19, 2022
</relative-time>
</li>
<li class="mr-4">
<span class="f6 my-1 ml-0">
<span class="repo-language-color" style="background-color: #3572A5"></span>
<span itemprop="programmingLanguage">Python</span>
</span>
</li>
</ul>
</div>
</div>
</article>
<article class="border rounded color-shadow-small color-bg-subtle my-4">
<a class="overflow-hidden flex-items-center rounded-top-2 color-border-muted border-bott
om d-flex position-relative" data-hydro-click='{"event_type":"explore.click","payload":
{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY","click_visual_representat
ion":"REPOSITORY_IMAGE","actor_id":null,"record_id":213916896,"originating_url":"http
```

```
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="9b1147e236bcaddd09ce4
c3e4842db6947bcc24bcf55bf38f7b2848afb3c30e2" data-turbo="false" data-view-component="tru
e" href="/blender/blender" style="max-height:275px">
<img alt="blender" class="d-block width-full" loading="lazy" src="https://repository-ima
ges.githubusercontent.com/213916896/88a85980-6fcb-11ea-9a93-e566f8f29ea9"/>
</a>
<div class="px-3">
<div class="d-flex flex-justify-between my-3">
<div class="d-flex flex-auto">
<span style="margin-top:2px">
<svg aria-hidden="true" class="octicon octicon-repo color-fg-muted mr-2" data-view-compo
nent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M2 2.5A2.5 2.5 0 014.5 0h8.75a.75.75 0 01.75.75v12.5a.75.75 0 01-.75.75h-2.5a.7
5.75 0 110-1.5h1.75v-2h-8a1 1 0 00-.714 1.7.75.75 0 01-1.072 1.05A2.495 2.495 0 012 11.5
v-9zm10.5-1V9h-8c-.356 0-.694.074-1 .208V2.5a1 1 0 011-1h8zM5 12.25v3.25a.25.25 0 00.4.2
l1.45-1.087a.25.25 0 01.3 0L8.6 15.7a.25.25 0 00.4-.2v-3.25a.25.25 0 00-.25-.25h-3.5a.2
5.25 0 00-.25.25z" fill-rule="evenodd"></path>
</svg>
</span>
<h3 class="f3 color-fg-muted text-normal lh-condensed">
<a data-hydro-click='{"event_type":"explore.click","payload":{"click_context":"REPOSITOR
Y_CARD","click_target":"OWNER","click_visual_representation":"REPOSITORY_OWNER_HEADIN
G","actor_id":null,"record_id":52924476,"originating_url":"https://github.com/topics/3
d","user_id":null}}' data-hydro-click-hmac="3ef621e0683e557bb6ec46fbf192cfbfdd0fa2e15d1e
d98932b3546e43be6655" data-turbo="false" data-view-component="true" href="/blender">
            blender
</a>          /
          <a class="text-bold wb-break-word" data-hydro-click='{"event_type":"explore.cl
ick","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY","click_vis
ual_representation":"REPOSITORY_NAME_HEADING","actor_id":null,"record_id":213916896,"ori
ginating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="ac
5fee340bdeebc5fd06dbf09aca394adad6d0a397aa20f51ddee7ea76ed61f0" data-turbo="false" data-
view-component="true" href="/blender/blender">
            blender
</a> </h3>
</div>
<div class="d-flex flex-items-center ml-3">
<div class="BtnGroup d-flex" data-view-component="true">
<a aria-label="You must be signed in to star a repository" class="tooltipped tooltipped-
s btn-sm btn BtnGroup-item color-bg-default" data-hydro-click='{"event_type":"authentica
tion.click","payload":{"location_in_page":"star button","repository_id":213916896,"auth_
type":"LOG_IN","originating_url":"https://github.com/topics/3d","user_id":null}}' data-h
ydro-click-hmac="5d7542b8585d18252e1ae47b570fc2dc917158ed95914cf5723a18bc2a054637" data-
view-component="true" href="/login?return_to=%2Fblender%2Fblender" rel="nofollow"> <svg
 aria-hidden="true" class="octicon octicon-star v-align-text-bottom d-inline-block mr-2"
 data-view-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 .25a.75.75 0 01.673.418l1.882 3.815 4.21.612a.75.75 0 01.416 1.279l-3.046 2.
97.719 4.192a.75.75 0 01-1.088.791L8 12.347l-3.766 1.98a.75.75 0 01-1.088-.79l.72-4.194
L.818 6.374a.75.75 0 01.416-1.28l4.21-.611L7.327.668A.75.75 0 018 .25zm0 2.445L6.615 5.5
a.75.75 0 01-.564.41l-3.097.45 2.24 2.184a.75.75 0 01.216.664l-.528 3.084 2.769-1.456a.7
5.75 0 01.698 0l2.77 1.456-.53-3.084a.75.75 0 01.216-.664l2.24-2.183-3.096-.45a.75.75 0
 01-.564-.41L8 2.694v.001z" fill-rule="evenodd"></path>
</svg><span class="d-inline" data-view-component="true">
          Star
</span> <span aria-label="6392 users starred this repository" class="Counter js-social-c
ount" data-pjax-replace="true" data-plural-suffix="users starred this repository" data-s
ingular-suffix="user starred this repository" data-turbo-replace="true" data-view-compon
ent="true" id="repo-stars-counter-star" title="6,392">6.4k</span>
</a> <button aria-label="You must be signed in to add this repository to a list" class
="btn-sm btn BtnGroup-item px-2" data-view-component="true" disabled="disabled" type="bu
tton"> <svg aria-hidden="true" class="octicon octicon-triangle-down" data-view-component
="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.427 7.427l3.396 3.396a.25.25 0 00.354 0l3.396-3.396A.25.25 0 0011.396 7H4.60
4a.25.25 0 00-.177.427z"></path>
</svg>
</button></div>
```

```html
</div>
</div>
</div>
<nav aria-label="Repository menu" class="tabnav px-3 mb-0" data-view-component="true">
<ul class="tabnav-tabs" data-view-component="true">
<li class="d-inline-flex" data-view-component="true">
<a aria-current="true" class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_typ
e":"explore.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITO
RY","click_visual_representation":"CODE_TAB","actor_id":null,"record_id":213916896,"orig
inating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="066
7885646836cc4efc82c83f166a1442d5d4d95a5fb3aaf16f7a93fd7490baf" data-turbo="false" data-v
iew-component="true" href="/blender/blender" id="code-tab-213916896">
<svg aria-hidden="true" class="octicon octicon-code color-fg-default" data-view-componen
t="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.72 3.22a.75.75 0 011.06 1.06L2.06 8l3.72 3.72a.75.75 0 11-1.06 1.06L.47 8.53
a.75.75 0 010-1.06l4.25-4.25zm6.56 0a.75.75 0 10-1.06 1.06L13.94 8l-3.72 3.72a.75.75 0 1
01.06 1.06l4.25-4.25a.75.75 0 000-1.06l-4.25-4.25z" fill-rule="evenodd"></path>
</svg> Code


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_ISSUES","click_visual
_representation":"ISSUES_TAB","actor_id":null,"record_id":213916896,"originating_url":"h
ttps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="d1f8ca00b452ee8b77
312a76927a3abccde3e35adc33f4184743a948f163e2a4" data-turbo="false" data-view-component
="true" href="/blender/blender/issues" id="issues-tab-213916896">
<svg aria-hidden="true" class="octicon octicon-issue-opened color-fg-muted" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 9.5a1.5 1.5 0 100-3 1.5 1.5 0 000 3z"></path><path d="M8 0a8 8 0 100 16A8 8
 0 008 0zM1.5 8a6.5 6.5 0 1113 0 6.5 6.5 0 01-13 0z" fill-rule="evenodd"></path>
</svg> Issues


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_PULL_REQUESTS","click
_visual_representation":"PULL_REQUESTS_TAB","actor_id":null,"record_id":213916896,"origi
nating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="6bcb
febdae199d524da1783f4b2348e207292ce31da9a79ed88c26b037c43bb3" data-turbo="false" data-vi
ew-component="true" href="/blender/blender/pulls" id="pull-requests-tab-213916896">
<svg aria-hidden="true" class="octicon octicon-git-pull-request color-fg-muted" data-vie
w-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M7.177 3.073L9.573.677A.25.25 0 0110 .854v4.792a.25.25 0 01-.427.177L7.177 3.42
7a.25.25 0 010-.354zM3.75 2.5a.75.75 0 100 1.5.75.75 0 000-1.5zm-2.25.75a2.25 2.25 0 113
 2.122v5.256a2.251 2.251 0 11-1.5 0V5.372A2.25 2.25 0 011.5 3.25zM11 2.5h-1V4h1a1 1 0 01
1 1v5.628a2.251 2.251 0 101.5 0V5A2.5 2.5 0 0011 2.5zm1 10.25a.75.75 0 111.5 0 .75.75 0
 01-1.5 0zM3.75 12a.75.75 0 100 1.5.75.75 0 000-1.5z" fill-rule="evenodd"></path>
</svg> Pull requests


</a></li>
</ul>
</nav>
<div class="color-bg-default rounded-bottom-2">
<div class="px-3 pt-3">
<p class="color-fg-muted mb-0"><div>Official mirror of Blender</div></p>
</div>
<div class="d-flex flex-wrap border-bottom color-border-muted px-3 pt-2 pb-2">
<a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explore.cli
ck","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visual_re
presentation":"TOPIC_TAG","actor_id":null,"record_id":12696,"originating_url":"https://g
ithub.com/topics/3d","user_id":null}}' data-hydro-click-hmac="8d51b40a17d0ec49d8c9f94809
ea177ea83b904e1cebb646fa825a2eefc6d778" data-view-component="true" href="/topics/animati
```

```
on" title="Topic: animation">
              animation
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":13080,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="517f6d4da5cec1ee4dfaf
e3eb3aa0f5dd7287c4404569367259665f587636917" data-view-component="true" href="/topics/re
ndering" title="Topic: rendering">
              rendering
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":13442,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="0d6ae46592545600a99c0
f4c621dc9f42e729579a898a01de9cc0333c4ec0871" data-view-component="true" href="/topics/co
mputer-graphics" title="Topic: computer-graphics">
              computer-graphics
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":13511,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="a4c2d8fff4785fdecedc8
7fa3a903b736150efbb76d873912121a05ad9448edb" data-view-component="true" href="/topics/mo
deling" title="Topic: modeling">
              modeling
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":123644,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="64b75b13a347d711d920
9307a447d460f5cf31796e3a2da684335a645a245ee4" data-view-component="true" href="/topics/b
3d" title="Topic: b3d">
              b3d
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":238400,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="028a08f740516273aa7f
05a2f5db3c450593017549ffa99920f497664d796dbe" data-view-component="true" href="/topics/3
d" title="Topic: 3d">
              3d
</a> </div>
<div class="p-3">
<ul class="d-flex f6 list-style-none color-fg-muted">
<li class="mr-4">
              Updated
              <relative-time class="no-wrap" datetime="2022-08-09T02:06:13Z">Aug 9, 2022</
relative-time>
</li>
<li class="mr-4">
<span class="f6 my-1 ml-0">
<span class="repo-language-color" style="background-color: #555555"></span>
<span itemprop="programmingLanguage">C</span>
</span>
</li>
</ul>
</div>
</div>
</article>
<article class="border rounded color-shadow-small color-bg-subtle my-4">
<div class="px-3">
<div class="d-flex flex-justify-between my-3">
<div class="d-flex flex-auto">
<span style="margin-top:2px">
<svg aria-hidden="true" class="octicon octicon-repo color-fg-muted mr-2" data-view-compo
nent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M2 2.5A2.5 2.5 0 014.5 0h8.75a.75.75 0 01.75.75v12.5a.75.75 0 01-.75.75h-2.5a.7
5.75 0 110-1.5h1.75v-2h-8a1 1 0 00-.714 1.7.75.75 0 01-1.072 1.05A2.495 2.495 0 012 11.5
v-9zm10.5-1V9h-8c-.356 0-.694.074-1 .208V2.5a1 1 0 011-1h8zM5 12.25v3.25a.25.25 0 00.4.2
l1.45-1.087a.25.25 0 01.3 0L8.6 15.7a.25.25 0 00.4-.2v-3.25a.25.25 0 00-.25-.25h-3.5a.2
```

```
5.25 0 00-.25.25z" fill-rule="evenodd"></path>
</svg>
</span>
<h3 class="f3 color-fg-muted text-normal lh-condensed">
<a data-hydro-click='{"event_type":"explore.click","payload":{"click_context":"REPOSITOR
Y_CARD","click_target":"OWNER","click_visual_representation":"REPOSITORY_OWNER_HEADIN
G","actor_id":null,"record_id":5639024,"originating_url":"https://github.com/topics/3
d","user_id":null}}' data-hydro-click-hmac="2b46ab94ba783e748930d230cdb4e412a8f4935af6bb
89136ae4f1c32f1b5ccb" data-turbo="false" data-view-component="true" href="/domlysz">
            domlysz
</a>            /
           <a class="text-bold wb-break-word" data-hydro-click='{"event_type":"explore.cl
ick","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY","click_vis
ual_representation":"REPOSITORY_NAME_HEADING","actor_id":null,"record_id":19577136,"orig
inating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="7c9
7f5ccba5ac252cf18348fde7349654b1bcc5a2849dff71c6c86aa5659f495" data-turbo="false" data-v
iew-component="true" href="/domlysz/BlenderGIS">
            BlenderGIS
</a> </h3>
</div>
<div class="d-flex flex-items-center ml-3">
<div class="BtnGroup d-flex" data-view-component="true">
<a aria-label="You must be signed in to star a repository" class="tooltipped tooltipped-
s btn-sm btn BtnGroup-item color-bg-default" data-hydro-click='{"event_type":"authentica
tion.click","payload":{"location_in_page":"star button","repository_id":19577136,"auth_t
ype":"LOG_IN","originating_url":"https://github.com/topics/3d","user_id":null}}' data-hy
dro-click-hmac="fb29fb1b0efacb88f4d630b36b9c4517ee2b764bf7dc6d0305ca43c292a3efb5" data-v
iew-component="true" href="/login?return_to=%2Fdomlysz%2FBlenderGIS" rel="nofollow"> <sv
g aria-hidden="true" class="octicon octicon-star v-align-text-bottom d-inline-block mr-
2" data-view-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 .25a.75.75 0 01.673.418l1.882 3.815 4.21.612a.75.75 0 01.416 1.279l-3.046 2.
97.719 4.192a.75.75 0 01-1.088.791L8 12.347l-3.766 1.98a.75.75 0 01-1.088-.79l.72-4.194
L.818 6.374a.75.75 0 01.416-1.28l4.21-.611L7.327.668A.75.75 0 018 .25zm0 2.445L6.615 5.5
a.75.75 0 01-.564.41l-3.097.45 2.24 2.184a.75.75 0 01.216.664l-.528 3.084 2.769-1.456a.7
5.75 0 01.698 0l2.77 1.456-.53-3.084a.75.75 0 01.216-.664l2.24-2.183-3.096-.45a.75.75 0
 01-.564-.41L8 2.694v.001z" fill-rule="evenodd"></path>
</svg><span class="d-inline" data-view-component="true">
            Star
</span> <span aria-label="5540 users starred this repository" class="Counter js-social-c
ount" data-pjax-replace="true" data-plural-suffix="users starred this repository" data-s
ingular-suffix="user starred this repository" data-turbo-replace="true" data-view-compon
ent="true" id="repo-stars-counter-star" title="5,540">5.5k</span>
</a> <button aria-label="You must be signed in to add this repository to a list" class
="btn-sm btn BtnGroup-item px-2" data-view-component="true" disabled="disabled" type="bu
tton"> <svg aria-hidden="true" class="octicon octicon-triangle-down" data-view-component
="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.427 7.427l3.396 3.396a.25.25 0 00.354 0l3.396-3.396A.25.25 0 0011.396 7H4.60
4a.25.25 0 00-.177.427z"></path>
</svg>
</button></div>
</div>
</div>
</div>
<nav aria-label="Repository menu" class="tabnav px-3 mb-0" data-view-component="true">
<ul class="tabnav-tabs" data-view-component="true">
<li class="d-inline-flex" data-view-component="true">
<a aria-current="true" class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_typ
e":"explore.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITO
RY","click_visual_representation":"CODE_TAB","actor_id":null,"record_id":19577136,"origi
nating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="66cf
ea9e3d938b94f6e594166319fbdd038bfe5ee2c747b6b11cf18938ef2400" data-turbo="false" data-vi
ew-component="true" href="/domlysz/BlenderGIS" id="code-tab-19577136">
<svg aria-hidden="true" class="octicon octicon-code color-fg-default" data-view-componen
t="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.72 3.22a.75.75 0 011.06 1.06L2.06 8l3.72 3.72a.75.75 0 11-1.06 1.06L.47 8.53
a.75.75 0 010-1.06l4.25-4.25zm6.56 0a.75.75 0 10-1.06 1.06L13.94 8l-3.72 3.72a.75.75 0 1
```

```
01.06 1.06l4.25-4.25a.75.75 0 000-1.06l-4.25-4.25z" fill-rule="evenodd"></path>
</svg> Code


</a></li>
<li class="d-inline-flex" data-view-component="true">
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oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_ISSUES","click_visual
_representation":"ISSUES_TAB","actor_id":null,"record_id":19577136,"originating_url":"ht
tps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="aa8d3584e40034aa45f
c6335efd52f64dc1d0bba3417448593dc4a44ea92b5aa" data-turbo="false" data-view-component="t
rue" href="/domlysz/BlenderGIS/issues" id="issues-tab-19577136">
<svg aria-hidden="true" class="octicon octicon-issue-opened color-fg-muted" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 9.5a1.5 1.5 0 100-3 1.5 1.5 0 000 3z"></path><path d="M8 0a8 8 0 100 16A8 8
 0 008 0zM1.5 8a6.5 6.5 0 1113 0 6.5 6.5 0 01-13 0z" fill-rule="evenodd"></path>
</svg> Issues


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
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_visual_representation":"PULL_REQUESTS_TAB","actor_id":null,"record_id":19577136,"origin
ating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="38b35
8c25327691d6f2e7530c2ece758dfd35374a42ea794bfb236825c0f9f97" data-turbo="false" data-vie
w-component="true" href="/domlysz/BlenderGIS/pulls" id="pull-requests-tab-19577136">
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w-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M7.177 3.073L9.573.677A.25.25 0 0110 .854v4.792a.25.25 0 01-.427.177L7.177 3.42
7a.25.25 0 010-.354zM3.75 2.5a.75.75 0 100 1.5.75.75 0 000-1.5zm-2.25.75a2.25 2.25 0 113
 2.122v5.256a2.251 2.251 0 11-1.5 0V5.372A2.25 2.25 0 011.5 3.25zM11 2.5h-1V4h1a1 1 0 01
1 1v5.628a2.251 2.251 0 101.5 0V5A2.5 2.5 0 0011 2.5zm1 10.25a.75.75 0 111.5 0 .75.75 0
 01-1.5 0zM3.75 12a.75.75 0 100 1.5.75.75 0 000-1.5z" fill-rule="evenodd"></path>
</svg> Pull requests


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
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isual_representation":"DISCUSSIONS_TAB","actor_id":null,"record_id":19577136,"originatin
g_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="0e94f1531
ee5003ad06ae1e220f2d02c510f3262ad2dfe3009337667108145c7" data-turbo="false" data-view-co
mponent="true" href="/domlysz/BlenderGIS/discussions" id="discussions-tab-19577136">
<svg aria-hidden="true" class="octicon octicon-comment-discussion color-fg-muted" data-v
iew-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M1.5 2.75a.25.25 0 01.25-.25h8.5a.25.25 0 01.25.25v5.5a.25.25 0 01-.25.25h-3.5
a.75.75 0 00-.53.22L3.5 11.44V9.25a.75.75 0 00-.75-.75h-1a.25.25 0 01-.25-.25v-5.5zM1.75
 1A1.75 1.75 0 000 2.75v5.5C0 9.216.784 10 1.75 10H2v1.543a1.457 1.457 0 002.487 1.03L7.
061 10h3.189A1.75 1.75 0 0012 8.25v-5.5A1.75 1.75 0 0010.25 1h-8.5zM14.5 4.75a.25.25 0 0
0-.25-.25h-.5a.75.75 0 110-1.5h.5c.966 0 1.75.784 1.75 1.75v5.5A1.75 1.75 0 0114.25 12H1
4v1.543a1.457 1.457 0 01-2.487 1.03L9.22 12.28a.75.75 0 111.06-1.06l2.22 2.22v-2.19a.75.
75 0 01.75-.75h1a.25.25 0 00.25-.25v-5.5z" fill-rule="evenodd"></path>
</svg> Discussions


</a></li>
</ul>
</nav>
<div class="color-bg-default rounded-bottom-2">
<div class="px-3 pt-3">
<p class="color-fg-muted mb-0"><div>Blender addons to make the bridge between Blender an
d geographic data</div></p>
</div>
<div class="d-flex flex-wrap border-bottom color-border-muted px-3 pt-2 pb-2">
```

```
<a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explore.cli
ck","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visual_re
presentation":"TOPIC_TAG","actor_id":null,"record_id":84,"originating_url":"https://gith
ub.com/topics/3d","user_id":null}}' data-hydro-click-hmac="be04bb3f99b96001c8d5df4567a7b
76ee6a378775e20f4cbb3474b09327ca088" data-view-component="true" href="/topics/python" ti
tle="Topic: python">
              python
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":249,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="ddd521e9b650a065fbe2c
0a7a107c882db4f7fa4e997a1d40024a1485a307dfd" data-view-component="true" href="/topics/ma
p" title="Topic: map">
              map
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":12434,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="d6901dd12a86847bf152e
2444d371d9348e1ad437c03e8cce8311b2da1cb096e" data-view-component="true" href="/topics/bl
ender" title="Topic: blender">
              blender
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":12493,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="115a27e6689eaf7835218
9f4cd91e9a5672e838c4d294b68782bd7b06347de25" data-view-component="true" href="/topics/ad
don" title="Topic: addon">
              addon
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":13664,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="8ecfb3dbb7162b495a171
41d68021e4fda2e9171ff6766dd7f1de27419ad84f6" data-view-component="true" href="/topics/op
enstreetmap" title="Topic: openstreetmap">
              openstreetmap
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":13945,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="b7f32ac8be802a2a32473
6dc80bdfaf64373b60fac0ca40ba744cf74fcf7f8c1" data-view-component="true" href="/topics/ge
ospatial" title="Topic: geospatial">
              geospatial
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":20578,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="9d92ad212f7b988b7fe7b
836cc5b6e54694e0fc7a2ad24bb2203dab085152988" data-view-component="true" href="/topics/gi
s" title="Topic: gis">
              gis
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":20599,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="1eddd1648c41c43cbe6f2
ea08d0faffb4a1204b1cc70ab3c83b08f89f7aac311" data-view-component="true" href="/topics/ge
odata" title="Topic: geodata">
              geodata
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":21382,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="2cf92eaacbd43c5a2f970
e7c2fd9e0a2c7d37d55c77375f6e5afaad7ab713b32" data-view-component="true" href="/topics/ra
ster" title="Topic: raster">
              raster
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":73825,"originating_url":"http
```

```
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="ce8c2f1be5381697584fe
87fe008b5f6b1e1527175d8dab20a41b46a75819f3a" data-view-component="true" href="/topics/sh
apefile" title="Topic: shapefile">
              shapefile
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":171235,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="af2e584df11576da3979
bc3434d3e1399703e6c49b34aca1abfdc4f3bb646737" data-view-component="true" href="/topics/g
eoreferencing" title="Topic: georeferencing">
              georeferencing
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":189832,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="86d6f38d00113ab4b68a
8c35cf5bb62bbb9b3a0ad9d12f52efb05e4c1bf0e82c" data-view-component="true" href="/topics/d
em" title="Topic: dem">
              dem
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":238400,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="028a08f740516273aa7f
05a2f5db3c450593017549ffa99920f497664d796dbe" data-view-component="true" href="/topics/3
d" title="Topic: 3d">
              3d
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":288310,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="774bbb95d30a0a11c8c1
5e61c8c8e1cf3fe9df12dcfc9794e4fc6bc59570648b" data-view-component="true" href="/topics/d
elaunay-triangulation" title="Topic: delaunay-triangulation">
              delaunay-triangulation
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":359945,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="30b6b5980a8157be4077
654fc5536ce4b2bb866f589d090cbacd5123278a6a56" data-view-component="true" href="/topics/3
dgis" title="Topic: 3dgis">
              3dgis
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":362727,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="3de5b5c0d8e83490c5c3
be4d057f6c38c8e38fd849f02e1d3187031b6c96f90a" data-view-component="true" href="/topics/i
mportexport" title="Topic: importexport">
              importexport
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":387932,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="154ce94e24ff3b9cc107
9539ad1852cd1c4f480fe1230bc87152c2e36064d89e" data-view-component="true" href="/topics/t
errain-model" title="Topic: terrain-model">
              terrain-model
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":387933,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="37e9062eca3ca5b1f6c6
61f80231590c9bacb66d562fb2425a82dbcc576fb317" data-view-component="true" href="/topics/b
asemap" title="Topic: basemap">
              basemap
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":387934,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="8bbc3f7bef04c33455ec
65549a7dc758a05a2323b0bb425e3d0bbac3fed6ca3d" data-view-component="true" href="/topics/3
d-map" title="Topic: 3d-map">
```

```
                           3d-map
</a> </div>
<div class="p-3">
<ul class="d-flex f6 list-style-none color-fg-muted">
<li class="mr-4">
             Updated
             <relative-time class="no-wrap" datetime="2022-07-15T20:12:37Z">Jul 15, 2022
</relative-time>
</li>
<li class="mr-4">
<span class="f6 my-1 ml-0">
<span class="repo-language-color" style="background-color: #3572A5"></span>
<span itemprop="programmingLanguage">Python</span>
</span>
</li>
</ul>
</div>
</div>
</article>
<article class="border rounded color-shadow-small color-bg-subtle my-4">
<div class="px-3">
<div class="d-flex flex-justify-between my-3">
<div class="d-flex flex-auto">
<span style="margin-top:2px">
<svg aria-hidden="true" class="octicon octicon-repo color-fg-muted mr-2" data-view-compo
nent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M2 2.5A2.5 2.5 0 014.5 0h8.75a.75.75 0 01.75.75v12.5a.75.75 0 01-.75.75h-2.5a.7
5.75 0 110-1.5h1.75v-2h-8a1 1 0 00-.714 1.7.75.75 0 01-1.072 1.05A2.495 2.495 0 012 11.5
v-9zm10.5-1V9h-8c-.356 0-.694.074-1 .208V2.5a1 1 0 011-1h8zM5 12.25v3.25a.25.25 0 00.4.2
l1.45-1.087a.25.25 0 01.3 0L8.6 15.7a.25.25 0 00.4-.2v-3.25a.25.25 0 00-.25-.25h-3.5a.2
5.25 0 00-.25.25z" fill-rule="evenodd"></path>
</svg>
</span>
<h3 class="f3 color-fg-muted text-normal lh-condensed">
<a data-hydro-click='{"event_type":"explore.click","payload":{"click_context":"REPOSITOR
Y_CARD","click_target":"OWNER","click_visual_representation":"REPOSITORY_OWNER_HEADIN
G","actor_id":null,"record_id":466370,"originating_url":"https://github.com/topics/3
d","user_id":null}}' data-hydro-click-hmac="6e27233282417634bd67b72ffd9eb417d80e8683b1df
666e55551cc9b8be4532" data-turbo="false" data-view-component="true" href="/openscad">
             openscad
</a>        /
          <a class="text-bold wb-break-word" data-hydro-click='{"event_type":"explore.cl
ick","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY","click_vis
ual_representation":"REPOSITORY_NAME_HEADING","actor_id":null,"record_id":1049088,"origi
nating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="ce45
9e10b38eff918a7732ee23229e2547b096565812cfa6a9fb3a60b47ed1bd" data-turbo="false" data-vi
ew-component="true" href="/openscad/openscad">
             openscad
</a> </h3>
</div>
<div class="d-flex flex-items-center ml-3">
<a aria-label="Sponsor @openscad" class="btn btn-sm mr-2" data-hydro-click='{"event_typ
e":"sponsors.button_click","payload":{"button":"TOPIC_PAGE_SPONSOR","sponsorable_logi
n":"openscad","originating_url":"https://github.com/topics/3d","user_id":null}}' data-hy
dro-click-hmac="2b657148c785e90a2719a0ca485b6b0068cfee31e98fcaa846b864b5ff216ea2" data-v
iew-component="true" href="/sponsors/openscad">
<svg aria-hidden="true" class="octicon octicon-heart icon-sponsor mr-1 v-align-middle co
lor-fg-sponsors anim-pulse-in" data-view-component="true" height="16" version="1.1" view
box="0 0 16 16" width="16">
<path d="M4.25 2.5c-1.336 0-2.75 1.164-2.75 3 0 2.15 1.58 4.144 3.365 5.682A20.565 20.56
5 0 008 13.393a20.561 20.561 0 003.135-2.211C12.92 9.644 14.5 7.65 14.5 5.5c0-1.836-1.41
4-3-2.75-3-1.373 0-2.609.986-3.029 2.456a.75.75 0 01-1.442 0C6.859 3.486 5.623 2.5 4.25
 2.5zM8 14.25l-.345.666-.002-.001-.006-.003-.018-.01a7.643 7.643 0 01-.31-.17 22.075 22.
075 0 01-3.434-2.414C2.045 10.731 0 8.35 0 5.5 0 2.836 2.086 1 4.25 1 5.797 1 7.153 1.80
2 8 3.02 8.847 1.802 10.203 1 11.75 1 13.914 1 16 2.836 16 5.5c0 2.85-2.045 5.231-3.885
 6.818a22.08 22.08 0 01-3.744 2.584l-.018.01-.006.003h-.002L8 14.25zm0 01.345.666a.752.7
```

```
52 0 01-.69 0L8 14.25z" fill-rule="evenodd"></path>
</svg>
<span class="v-align-middle">Sponsor</span>
</a>
<div class="BtnGroup d-flex" data-view-component="true">
<a aria-label="You must be signed in to star a repository" class="tooltipped tooltipped-
s btn-sm btn BtnGroup-item color-bg-default" data-hydro-click='{"event_type":"authentica
tion.click","payload":{"location_in_page":"star button","repository_id":1049088,"auth_ty
pe":"LOG_IN","originating_url":"https://github.com/topics/3d","user_id":null}}' data-hyd
ro-click-hmac="c6fc7ae8d3d40c71da1781f430935f1cf057bb82f13574c21d8c3012d77d77c7" data-vi
ew-component="true" href="/login?return_to=%2Fopenscad%2Fopenscad" rel="nofollow"> <svg
 aria-hidden="true" class="octicon octicon-star v-align-text-bottom d-inline-block mr-2"
 data-view-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
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97.719 4.192a.75.75 0 01-1.088.791L8 12.347l-3.766 1.98a.75.75 0 01-1.088-.79l.72-4.194
L.818 6.374a.75.75 0 01.416-1.28l4.21-.611L7.327.668A.75.75 0 018 .25zm0 2.445L6.615 5.5
a.75.75 0 01-.564.41l-3.097.45 2.24 2.184a.75.75 0 01.216.664l-.528 3.084 2.769-1.456a.7
5.75 0 01.698 0l2.77 1.456-.53-3.084a.75.75 0 01.216-.664l2.24-2.183-3.096-.45a.75.75 0
 01-.564-.41L8 2.694v.001z" fill-rule="evenodd"></path>
</svg><span class="d-inline" data-view-component="true">
          Star
</span> <span aria-label="4958 users starred this repository" class="Counter js-social-c
ount" data-pjax-replace="true" data-plural-suffix="users starred this repository" data-s
ingular-suffix="user starred this repository" data-turbo-replace="true" data-view-compon
ent="true" id="repo-stars-counter-star" title="4,958">5k</span>
</a> <button aria-label="You must be signed in to add this repository to a list" class
="btn-sm btn BtnGroup-item px-2" data-view-component="true" disabled="disabled" type="bu
tton"> <svg aria-hidden="true" class="octicon octicon-triangle-down" data-view-component
="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.427 7.427l3.396 3.396a.25.25 0 00.354 0l3.396-3.396A.25.25 0 0011.396 7H4.60
4a.25.25 0 00-.177.427z"></path>
</svg>
</button></div>
</div>
</div>
</div>
<nav aria-label="Repository menu" class="tabnav px-3 mb-0" data-view-component="true">
<ul class="tabnav-tabs" data-view-component="true">
<li class="d-inline-flex" data-view-component="true">
<a aria-current="true" class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_typ
e":"explore.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITO
RY","click_visual_representation":"CODE_TAB","actor_id":null,"record_id":1049088,"origin
ating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="bb35b
a548abd83377340531e9cf592c2fa67788d781c5bd8384263dc345dac3c" data-turbo="false" data-vie
w-component="true" href="/openscad/openscad" id="code-tab-1049088">
<svg aria-hidden="true" class="octicon octicon-code color-fg-default" data-view-componen
t="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.72 3.22a.75.75 0 011.06 1.06L2.06 8l3.72 3.72a.75.75 0 11-1.06 1.06L.47 8.53
a.75.75 0 010-1.06l4.25-4.25zm6.56 0a.75.75 0 10-1.06 1.06L13.94 8l-3.72 3.72a.75.75 0 1
01.06 1.06l4.25-4.25a.75.75 0 000-1.06l-4.25-4.25z" fill-rule="evenodd"></path>
</svg> Code


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_ISSUES","click_visual
_representation":"ISSUES_TAB","actor_id":null,"record_id":1049088,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="d8bf02878f1ec9ff046c
3132ecfa44a32ed0fad58948a0dcace1b9472df417b0" data-turbo="false" data-view-component="tr
ue" href="/openscad/openscad/issues" id="issues-tab-1049088">
<svg aria-hidden="true" class="octicon octicon-issue-opened color-fg-muted" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 9.5a1.5 1.5 0 100-3 1.5 1.5 0 000 3z"></path><path d="M8 0a8 8 0 100 16A8 8
 0 008 0zM1.5 8a6.5 6.5 0 1113 0 6.5 6.5 0 01-13 0z" fill-rule="evenodd"></path>
</svg> Issues
```

```html
</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_PULL_REQUESTS","click
_visual_representation":"PULL_REQUESTS_TAB","actor_id":null,"record_id":1049088,"origina
ting_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="c0d90f
251802c3f05a7d520d7b1ba0a9ca2974fc8a6a5a669cff913717265474" data-turbo="false" data-view
-component="true" href="/openscad/openscad/pulls" id="pull-requests-tab-1049088">
<svg aria-hidden="true" class="octicon octicon-git-pull-request color-fg-muted" data-vie
w-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M7.177 3.073L9.573.677A.25.25 0 0110 .854v4.792a.25.25 0 01-.427.177L7.177 3.42
7a.25.25 0 010-.354zM3.75 2.5a.75.75 0 100 1.5.75.75 0 000-1.5zm-2.25.75a2.25 2.25 0 113
 2.122v5.256a2.251 2.251 0 11-1.5 0V5.372A2.25 2.25 0 011.5 3.25zM11 2.5h-1V4h1a1 1 0 01
1 1v5.628a2.251 2.251 0 101.5 0V5A2.5 2.5 0 0011 2.5zm1 10.25a.75.75 0 111.5 0 .75.75 0
 01-1.5 0zM3.75 12a.75.75 0 100 1.5.75.75 0 000-1.5z" fill-rule="evenodd"></path>
</svg> Pull requests


</a></li>
</ul>
</nav>
<div class="color-bg-default rounded-bottom-2">
<div class="px-3 pt-3">
<p class="color-fg-muted mb-0"><div>OpenSCAD - The Programmers Solid 3D CAD Modeller  </
div></p>
</div>
<div class="d-flex flex-wrap border-bottom color-border-muted px-3 pt-2 pb-2">
<a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explore.cli
ck","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visual_re
presentation":"TOPIC_TAG","actor_id":null,"record_id":198,"originating_url":"https://git
hub.com/topics/3d","user_id":null}}' data-hydro-click-hmac="4401c780d23c889b9c76f45497f9
70453541d4a81d69592220d29292a9c84fe3" data-view-component="true" href="/topics/windows"
 title="Topic: windows">
            windows
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":199,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="9b644d70c43b89e8bc8a0
d9e3150642416ee52488f65c561ec0ee031e02eb366" data-view-component="true" href="/topics/ma
cos" title="Topic: macos">
            macos
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":200,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="bafae3445ec7531a94b91
fa467812f2418f9bfe23ec640e316c25bf4621e00e5" data-view-component="true" href="/topics/li
nux" title="Topic: linux">
            linux
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":658,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="839a6eeb2274c8da68dbc
0d261e541da47bfcdbff2930932df94162f9346b88b" data-view-component="true" href="/topics/c-
plus-plus" title="Topic: c-plus-plus">
            c-plus-plus
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":8973,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="adc813d832197f96443bc
9ead9e362219f953f9cfdbceb7d210b485a57d17430" data-view-component="true" href="/topics/op
engl" title="Topic: opengl">
            opengl
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
```

```
al_representation":"TOPIC_TAG","actor_id":null,"record_id":23801,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="691cb5fc0c666b3ae9f83
7f3ffa5a8a00d7a3869d614d8ce579d766d9c521aff" data-view-component="true" href="/topics/qt
5" title="Topic: qt5">
              qt5
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":34679,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="d02a4a15853ca1c021b96
4830bb1a6a642fedab0bf483031fea3f68575541fc2" data-view-component="true" href="/topics/c-
plus-plus-14" title="Topic: c-plus-plus-14">
              c-plus-plus-14
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":60056,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="bf61c4334bc339bad1af5
b218bb086cd2e9b02c3341e0c105335df9d9ce80263" data-view-component="true" href="/topics/op
enscad" title="Topic: openscad">
              openscad
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":232595,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="4537651ce91580bfec20
3403e124b62249352a6e978a55da82b9a3cd1fe5e28d" data-view-component="true" href="/topics/3
d-printing" title="Topic: 3d-printing">
              3d-printing
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":238400,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="028a08f740516273aa7f
05a2f5db3c450593017549ffa99920f497664d796dbe" data-view-component="true" href="/topics/3
d" title="Topic: 3d">
              3d
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":282405,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="067a48a3f9f47e9a40ea
c965cb487150f6316888b370986da8f3c036fd4cd028" data-view-component="true" href="/topics/3
d-graphics" title="Topic: 3d-graphics">
              3d-graphics
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":288100,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="89d10a3633e93ead7aa7
94d0a88efe25e1cb18779f51a0ca54762d227f0409c8" data-view-component="true" href="/topics/3
d-models" title="Topic: 3d-models">
              3d-models
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":401284,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="96f12ac6896d30b6f17b
29c55e5b6b739033bdcad41a0005d0caba7a1208e96e" data-view-component="true" href="/topics/d
xf-files" title="Topic: dxf-files">
              dxf-files
</a> </div>
<div class="p-3">
<ul class="d-flex f6 list-style-none color-fg-muted">
<li class="mr-4">
              Updated
              <relative-time class="no-wrap" datetime="2022-08-29T06:02:52Z">Aug 29, 2022
</relative-time>
</li>
<li class="mr-4">
<span class="f6 my-1 ml-0">
<span class="repo-language-color" style="background-color: #f34b7d"></span>
<span itemprop="programmingLanguage">C++</span>
```

```
        </span>
      </li>
    </ul>
  </div>
</div>
</article>
<article class="border rounded color-shadow-small color-bg-subtle my-4">
<div class="px-3">
<div class="d-flex flex-justify-between my-3">
<div class="d-flex flex-auto">
<span style="margin-top:2px">
<svg aria-hidden="true" class="octicon octicon-repo color-fg-muted mr-2" data-view-compo
nent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M2 2.5A2.5 2.5 0 014.5 0h8.75a.75.75 0 01.75.75v12.5a.75.75 0 01-.75.75h-2.5a.7
5.75 0 110-1.5h1.75v-2h-8a1 1 0 00-.714 1.7.75.75 0 01-1.072 1.05A2.495 2.495 0 012 11.5
v-9zm10.5-1V9h-8c-.356 0-.694.074-1 .208V2.5a1 1 0 011-1h8zM5 12.25v3.25a.25.25 0 00.4.2
l1.45-1.087a.25.25 0 01.3 0L8.6 15.7a.25.25 0 00.4-.2v-3.25a.25.25 0 00-.25-.25h-3.5a.2
5.25 0 00-.25.25z" fill-rule="evenodd"></path>
</svg>
</span>
<h3 class="f3 color-fg-muted text-normal lh-condensed">
<a data-hydro-click='{"event_type":"explore.click","payload":{"click_context":"REPOSITOR
Y_CARD","click_target":"OWNER","click_visual_representation":"REPOSITORY_OWNER_HEADIN
G","actor_id":null,"record_id":29911379,"originating_url":"https://github.com/topics/3
d","user_id":null}}' data-hydro-click-hmac="f73e50528259296676fd44b4cdcf910acd91b7ec5540
ff270bb045e86b1c38d8" data-turbo="false" data-view-component="true" href="/spritejs">
            spritejs
</a>        /
        <a class="text-bold wb-break-word" data-hydro-click='{"event_type":"explore.cl
ick","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY","click_vis
ual_representation":"REPOSITORY_NAME_HEADING","actor_id":null,"record_id":96287699,"orig
inating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="a56
e16d0a40310d1b96aaa49cca27395eceed1a101cf1a0bacaf5355cd7d0b54" data-turbo="false" data-v
iew-component="true" href="/spritejs/spritejs">
            spritejs
</a> </h3>
</div>
<div class="d-flex flex-items-center ml-3">
<div class="BtnGroup d-flex" data-view-component="true">
<a aria-label="You must be signed in to star a repository" class="tooltipped tooltipped-
s btn-sm btn BtnGroup-item color-bg-default" data-hydro-click='{"event_type":"authentica
tion.click","payload":{"location_in_page":"star button","repository_id":96287699,"auth_t
ype":"LOG_IN","originating_url":"https://github.com/topics/3d","user_id":null}}' data-hy
dro-click-hmac="d9f7fd925f56e6d6cf308bba5b7ec338dbf1b1e92ddd0872427f493871ede987" data-v
iew-component="true" href="/login?return_to=%2Fspritejs%2Fspritejs" rel="nofollow"> <svg
 aria-hidden="true" class="octicon octicon-star v-align-text-bottom d-inline-block mr-2"
 data-view-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 .25a.75.75 0 01.673.418l1.882 3.815 4.21.612a.75.75 0 01.416 1.279l-3.046 2.
97.719 4.192a.75.75 0 01-1.088.791L8 12.347l-3.766 1.98a.75.75 0 01-1.088-.79l.72-4.194
L.818 6.374a.75.75 0 01.416-1.28l4.21-.611L7.327.668A.75.75 0 018 .25zm0 2.445L6.615 5.5
a.75.75 0 01-.564.41l-3.097.45 2.24 2.184a.75.75 0 01.216.664l-.528 3.084 2.769-1.456a.7
5.75 0 01.698 0l2.77 1.456-.53-3.084a.75.75 0 01.216-.664l2.24-2.183-3.096-.45a.75.75 0
 01-.564-.41L8 2.694v.001z" fill-rule="evenodd"></path>
</svg><span class="d-inline" data-view-component="true">
            Star
</span> <span aria-label="4955 users starred this repository" class="Counter js-social-c
ount" data-pjax-replace="true" data-plural-suffix="users starred this repository" data-s
ingular-suffix="user starred this repository" data-turbo-replace="true" data-view-compon
ent="true" id="repo-stars-counter-star" title="4,955">5k</span>
</a> <button aria-label="You must be signed in to add this repository to a list" class
="btn-sm btn BtnGroup-item px-2" data-view-component="true" disabled="disabled" type="bu
tton"> <svg aria-hidden="true" class="octicon octicon-triangle-down" data-view-component
="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.427 7.427l3.396 3.396a.25.25 0 00.354 0l3.396-3.396A.25.25 0 0011.396 7H4.60
4a.25.25 0 00-.177.427z"></path>
</svg>
```

```
</button></div>
</div>
</div>
</div>
<nav aria-label="Repository menu" class="tabnav px-3 mb-0" data-view-component="true">
<ul class="tabnav-tabs" data-view-component="true">
<li class="d-inline-flex" data-view-component="true">
<a aria-current="true" class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_typ
e":"explore.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITO
RY","click_visual_representation":"CODE_TAB","actor_id":null,"record_id":96287699,"origi
nating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="419a
dac02573900692181b40fe046afa2281139d690163639a4cd21207a01146" data-turbo="false" data-vi
ew-component="true" href="/spritejs/spritejs" id="code-tab-96287699">
<svg aria-hidden="true" class="octicon octicon-code color-fg-default" data-view-componen
t="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.72 3.22a.75.75 0 011.06 1.06L2.06 8l3.72 3.72a.75.75 0 11-1.06 1.06L.47 8.53
a.75.75 0 010-1.06l4.25-4.25zm6.56 0a.75.75 0 10-1.06 1.06L13.94 8l-3.72 3.72a.75.75 0 1
01.06 1.06l4.25-4.25a.75.75 0 000-1.06l-4.25-4.25z" fill-rule="evenodd"></path>
</svg> Code


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_ISSUES","click_visual
_representation":"ISSUES_TAB","actor_id":null,"record_id":96287699,"originating_url":"ht
tps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="16255d771c44a7e64ef
c5ce9843c9373ec49cb738ff2dcb9c64b1b599b9783a4" data-turbo="false" data-view-component="t
rue" href="/spritejs/spritejs/issues" id="issues-tab-96287699">
<svg aria-hidden="true" class="octicon octicon-issue-opened color-fg-muted" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 9.5a1.5 1.5 0 100-3 1.5 1.5 0 000 3z"></path><path d="M8 0a8 8 0 100 16A8 8
 0 008 0zM1.5 8a6.5 6.5 0 1113 0 6.5 6.5 0 01-13 0z" fill-rule="evenodd"></path>
</svg> Issues


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_PULL_REQUESTS","click
_visual_representation":"PULL_REQUESTS_TAB","actor_id":null,"record_id":96287699,"origin
ating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="b752e
85748a6e062fbde7847f2762b8e77a7c86eb3fb3b44248a93f3fab74c32" data-turbo="false" data-vie
w-component="true" href="/spritejs/spritejs/pulls" id="pull-requests-tab-96287699">
<svg aria-hidden="true" class="octicon octicon-git-pull-request color-fg-muted" data-vie
w-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M7.177 3.073L9.573.677A.25.25 0 0110 .854v4.792a.25.25 0 01-.427.177L7.177 3.42
7a.25.25 0 010-.354zM3.75 2.5a.75.75 0 100 1.5.75.75 0 000-1.5zm-2.25.75a2.25 2.25 0 113
 2.122v5.256a2.251 2.251 0 11-1.5 0V5.372A2.25 2.25 0 011.5 3.25zM11 2.5h-1V4h1a1 1 0 01
1 1v5.628a2.251 2.251 0 101.5 0V5A2.5 2.5 0 0011 2.5zm1 10.25a.75.75 0 111.5 0 .75.75 0
 01-1.5 0zM3.75 12a.75.75 0 100 1.5.75.75 0 000-1.5z" fill-rule="evenodd"></path>
</svg> Pull requests


</a></li>
</ul>
</nav>
<div class="color-bg-default rounded-bottom-2">
<div class="px-3 pt-3">
<p class="color-fg-muted mb-0"><div>A cross platform high-performance graphics system.</
div></p>
</div>
<div class="d-flex flex-wrap border-bottom color-border-muted px-3 pt-2 pb-2">
<a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explore.cli
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presentation":"TOPIC_TAG","actor_id":null,"record_id":2119,"originating_url":"https://gi
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```
thub.com/topics/3d","user_id":null}}' data-hydro-click-hmac="d2e607f9d7b25ee5a5f68ce176f
ebce6c2f1236e5bf9ca64fdb5da5a01a19767" data-view-component="true" href="/topics/webgl" t
itle="Topic: webgl">
              webgl
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":9049,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="0694e7e822f74b8a606df
97d0cb6572a660b366fa0697b2001a01371c72f3bd2" data-view-component="true" href="/topics/ca
nvas" title="Topic: canvas">
              canvas
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="517f6d4da5cec1ee4dfaf
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ndering" title="Topic: rendering">
              rendering
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":177465,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="cf61b63494249752f032
1b2eccd33ed2bcf9ca557f15ed9efcd28b7992d76571" data-view-component="true" href="/topics/w
ebgl2" title="Topic: webgl2">
              webgl2
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":238400,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="028a08f740516273aa7f
05a2f5db3c450593017549ffa99920f497664d796dbe" data-view-component="true" href="/topics/3
d" title="Topic: 3d">
              3d
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
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ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="6608a741a5bb365111a1
89e4fb161b7be32438564f7eeade46e580e52d186a5c" data-view-component="true" href="/topics/2
d" title="Topic: 2d">
              2d
</a> </div>
<div class="p-3">
<ul class="d-flex f6 list-style-none color-fg-muted">
<li class="mr-4">
              Updated
              <relative-time class="no-wrap" datetime="2022-07-03T03:29:28Z">Jul 3, 2022</
relative-time>
</li>
<li class="mr-4">
<span class="f6 my-1 ml-0">
<span class="repo-language-color" style="background-color: #f1e05a"></span>
<span itemprop="programmingLanguage">JavaScript</span>
</span>
</li>
</ul>
</div>
</div>
</article>
<article class="border rounded color-shadow-small color-bg-subtle my-4">
<div class="px-3">
<div class="d-flex flex-justify-between my-3">
<div class="d-flex flex-auto">
<span style="margin-top:2px">
<svg aria-hidden="true" class="octicon octicon-repo color-fg-muted mr-2" data-view-compo
nent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M2 2.5A2.5 2.5 0 014.5 0h8.75a.75.75 0 01.75.75v12.5a.75.75 0 01-.75.75h-2.5a.7
5.75 0 110-1.5h1.75v-2h-8a1 1 0 00-.714 1.7.75.75 0 01-1.072 1.05A2.495 2.495 0 012 11.5
```

```
v-9zm10.5-1V9h-8c-.356 0-.694.074-1 .208V2.5a1 1 0 011-1h8zM5 12.25v3.25a.25.25 0 00.4.2
l1.45-1.087a.25.25 0 01.3 0L8.6 15.7a.25.25 0 00.4-.2v-3.25a.25.25 0 00-.25-.25h-3.5a.2
5.25 0 00-.25.25z" fill-rule="evenodd"></path>
</svg>
</span>
<h3 class="f3 color-fg-muted text-normal lh-condensed">
<a data-hydro-click='{"event_type":"explore.click","payload":{"click_context":"REPOSITOR
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G","actor_id":null,"record_id":43156133,"originating_url":"https://github.com/topics/3
d","user_id":null}}' data-hydro-click-hmac="3fd24e8e9c72aec7e179a9e25c170d3622bf447cd08b
47aeaeed5c12de9f4198" data-turbo="false" data-view-component="true" href="/tensorspace-t
eam">
            tensorspace-team
</a>          /
          <a class="text-bold wb-break-word" data-hydro-click='{"event_type":"explore.cl
ick","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY","click_vis
ual_representation":"REPOSITORY_NAME_HEADING","actor_id":null,"record_id":141901715,"ori
ginating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="a5
7e8303ce8aceff7bbbf2ca5398ea4286a0e0a67af0a921472f4b4b26fe0ce1" data-turbo="false" data-
view-component="true" href="/tensorspace-team/tensorspace">
            tensorspace
</a> </h3>
</div>
<div class="d-flex flex-items-center ml-3">
<div class="BtnGroup d-flex" data-view-component="true">
<a aria-label="You must be signed in to star a repository" class="tooltipped tooltipped-
s btn-sm btn BtnGroup-item color-bg-default" data-hydro-click='{"event_type":"authentica
tion.click","payload":{"location_in_page":"star button","repository_id":141901715,"auth_
type":"LOG_IN","originating_url":"https://github.com/topics/3d","user_id":null}}' data-h
ydro-click-hmac="4956ce771aae43360dc8abd11ddeff3fb2d27c9f7f028ec75be2ec94d6dcaea1" data-
view-component="true" href="/login?return_to=%2Ftensorspace-team%2Ftensorspace" rel="nof
ollow"> <svg aria-hidden="true" class="octicon octicon-star v-align-text-bottom d-inline
-block mr-2" data-view-component="true" height="16" version="1.1" viewbox="0 0 16 16" wi
dth="16">
<path d="M8 .25a.75.75 0 01.673.418l1.882 3.815 4.21.612a.75.75 0 01.416 1.279l-3.046 2.
97.719 4.192a.75.75 0 01-1.088.79lL8 12.347l-3.766 1.98a.75.75 0 01-1.088-.79l.72-4.194
L.818 6.374a.75.75 0 01.416-1.28l4.21-.611L7.327.668A.75.75 0 018 .25zm0 2.445L6.615 5.5
a.75.75 0 01-.564.41l-3.097.45 2.24 2.184a.75.75 0 01.216.664l-.528 3.084 2.769-1.456a.7
5.75 0 01.698 0l2.77 1.456-.53-3.084a.75.75 0 01.216-.664l2.24-2.183-3.096-.45a.75.75 0
 01-.564-.41L8 2.694v.001z" fill-rule="evenodd"></path>
</svg><span class="d-inline" data-view-component="true">
          Star
</span> <span aria-label="4701 users starred this repository" class="Counter js-social-c
ount" data-pjax-replace="true" data-plural-suffix="users starred this repository" data-s
ingular-suffix="user starred this repository" data-turbo-replace="true" data-view-compon
ent="true" id="repo-stars-counter-star" title="4,701">4.7k</span>
</a> <button aria-label="You must be signed in to add this repository to a list" class
="btn-sm btn BtnGroup-item px-2" data-view-component="true" disabled="disabled" type="bu
tton"> <svg aria-hidden="true" class="octicon octicon-triangle-down" data-view-component
="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.427 7.42l3.396 3.396a.25.25 0 00.354 0l3.396-3.396A.25.25 0 0011.396 7H4.60
4a.25.25 0 00-.177.427z"></path>
</svg>
</button></div>
</div>
</div>
</div>
<nav aria-label="Repository menu" class="tabnav px-3 mb-0" data-view-component="true">
<ul class="tabnav-tabs" data-view-component="true">
<li class="d-inline-flex" data-view-component="true">
<a aria-current="true" class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_typ
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RY","click_visual_representation":"CODE_TAB","actor_id":null,"record_id":141901715,"orig
inating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="543
f2b48b6584bc710493553bfca7bdbb241dcc507f0a43e74a9d4b3ee253bde" data-turbo="false" data-v
iew-component="true" href="/tensorspace-team/tensorspace" id="code-tab-141901715">
```

```html
<svg aria-hidden="true" class="octicon octicon-code color-fg-default" data-view-componen
t="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.72 3.22a.75.75 0 011.06 1.06L2.06 8l3.72 3.72a.75.75 0 11-1.06 1.06L.47 8.53
a.75.75 0 010-1.06l4.25-4.25zm6.56 0a.75.75 0 10-1.06 1.06L13.94 8l-3.72 3.72a.75.75 0 1
01.06 1.06l4.25-4.25a.75.75 0 000-1.06l-4.25-4.25z" fill-rule="evenodd"></path>
</svg> Code


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_ISSUES","click_visual
_representation":"ISSUES_TAB","actor_id":null,"record_id":141901715,"originating_url":"h
ttps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="2fd6050d9ae5ba338c
9de336d3ee130b0c23034edb5ff2c4dd2aadb5ca4623c5" data-turbo="false" data-view-component
="true" href="/tensorspace-team/tensorspace/issues" id="issues-tab-141901715">
<svg aria-hidden="true" class="octicon octicon-issue-opened color-fg-muted" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 9.5a1.5 1.5 0 100-3 1.5 1.5 0 000 3z"></path><path d="M8 0a8 8 0 100 16A8 8
 0 008 0zM1.5 8a6.5 6.5 0 1113 0 6.5 6.5 0 01-13 0z" fill-rule="evenodd"></path>
</svg> Issues


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_PULL_REQUESTS","click
_visual_representation":"PULL_REQUESTS_TAB","actor_id":null,"record_id":141901715,"origi
nating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="2ae5
b95774c4dad426a0b462e30174907f113eb8a96c89d66656c45b5d1751ac" data-turbo="false" data-vi
ew-component="true" href="/tensorspace-team/tensorspace/pulls" id="pull-requests-tab-141
901715">
<svg aria-hidden="true" class="octicon octicon-git-pull-request color-fg-muted" data-vie
w-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M7.177 3.073L9.573.677A.25.25 0 0110 .854v4.792a.25.25 0 01-.427.177L7.177 3.42
7a.25.25 0 010-.354zM3.75 2.5a.75.75 0 100 1.5.75.75 0 000-1.5zm-2.25.75a2.25 2.25 0 113
 2.122v5.256a2.251 2.251 0 11-1.5 0V5.372A2.25 2.25 0 011.5 3.25zM11 2.5h-1V4h1a1 1 0 01
1 1v5.628a2.251 2.251 0 101.5 0V5A2.5 2.5 0 0011 2.5zm1 10.25a.75.75 0 111.5 0 .75.75 0
 01-1.5 0zM3.75 12a.75.75 0 100 1.5.75.75 0 000-1.5z" fill-rule="evenodd"></path>
</svg> Pull requests


</a></li>
</ul>
</nav>
<div class="color-bg-default rounded-bottom-2">
<div class="px-3 pt-3">
<p class="color-fg-muted mb-0"><div>Neural network 3D visualization framework, build int
eractive and intuitive model in browsers, support pre-trained deep learning models from
 TensorFlow, Keras, TensorFlow.js </div></p>
</div>
<div class="d-flex flex-wrap border-bottom color-border-muted px-3 pt-2 pb-2">
<a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explore.cli
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ub.com/topics/3d","user_id":null}}' data-hydro-click-hmac="f92442ca5e589828fa0e854454c4c
415a6046073fa231f7cb0d8921b05c07409" data-view-component="true" href="/topics/visualizat
ion" title="Topic: visualization">
            visualization
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="7ac60336afb502388a7b4
d9d01d780620c0532c7cb9a549e5ef23f06607aa3b8" data-view-component="true" href="/topics/th
reejs" title="Topic: threejs">
            threejs
```

```html
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":2169,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="87e01227589b9a4953e50
9a62a1245ff1aca4b0d1416cd9a99b6f65234f45a0a" data-view-component="true" href="/topics/ma
chine-learning" title="Topic: machine-learning">
              machine-learning
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="735b29635b1a14277f458
1d12d5896e0cbad5884237701cb474bc2820c5456c5" data-view-component="true" href="/topics/de
ep-learning" title="Topic: deep-learning">
              deep-learning
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":12734,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="63144f67077dc0cac95bc
3346b7de02d50281c436875849bbe515c923be99270" data-view-component="true" href="/topics/te
nsorflow" title="Topic: tensorflow">
              tensorflow
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":17705,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="cb3d6f0245beb7508483c
fef671a495437e3b64fb6b2fab3f747ffa3aeaf2499" data-view-component="true" href="/topics/ke
ras" title="Topic: keras">
              keras
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":238400,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="028a08f740516273aa7f
05a2f5db3c450593017549ffa99920f497664d796dbe" data-view-component="true" href="/topics/3
d" title="Topic: 3d">
              3d
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":519436,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="a092728df673819db4af
fe34150c6b04ce4c74c973a672ea95265a1ea4e5c058" data-view-component="true" href="/topics/n
erual-network" title="Topic: nerual-network">
              nerual-network
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
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al_representation":"TOPIC_TAG","actor_id":null,"record_id":739051,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="53fe36eb1f5a46463276
bd7400485e38181005644a4d1f3b213a84ea4fe015a0" data-view-component="true" href="/topics/t
fjs" title="Topic: tfjs">
              tfjs
</a> </div>
<div class="p-3">
<ul class="d-flex f6 list-style-none color-fg-muted">
<li class="mr-4">
              Updated
              <relative-time class="no-wrap" datetime="2022-07-25T23:32:25Z">Jul 25, 2022
</relative-time>
</li>
<li class="mr-4">
<span class="f6 my-1 ml-0">
<span class="repo-language-color" style="background-color: #f1e05a"></span>
<span itemprop="programmingLanguage">JavaScript</span>
</span>
</li>
</ul>
</div>
</div>
```

```html
</article>
<article class="border rounded color-shadow-small color-bg-subtle my-4">
<div class="px-3">
<div class="d-flex flex-justify-between my-3">
<div class="d-flex flex-auto">
<span style="margin-top:2px">
<svg aria-hidden="true" class="octicon octicon-repo color-fg-muted mr-2" data-view-compo
nent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M2 2.5A2.5 2.5 0 014.5 0h8.75a.75.75 0 01.75.75v12.5a.75.75 0 01-.75.75h-2.5a.7
5.75 0 110-1.5h1.75v-2h-8a1 1 0 00-.714 1.7.75.75 0 01-1.072 1.05A2.495 2.495 0 012 11.5
v-9zm10.5-1V9h-8c-.356 0-.694.074-1 .208V2.5a1 1 0 011-1h8zM5 12.25v3.25a.25.25 0 00.4.2
l1.45-1.087a.25.25 0 01.3 0L8.6 15.7a.25.25 0 00.4-.2v-3.25a.25.25 0 00-.25-.25h-3.5a.2
5.25 0 00-.25.25z" fill-rule="evenodd"></path>
</svg>
</span>
<h3 class="f3 color-fg-muted text-normal lh-condensed">
<a data-hydro-click='{"event_type":"explore.click","payload":{"click_context":"REPOSITOR
Y_CARD","click_target":"OWNER","click_visual_representation":"REPOSITORY_OWNER_HEADIN
G","actor_id":null,"record_id":393515,"originating_url":"https://github.com/topics/3
d","user_id":null}}' data-hydro-click-hmac="c3bf27c338bea41a20ec22010a10d077bdc14c5edf8a
9d3c14f464c1a18d4c24" data-turbo="false" data-view-component="true" href="/jagenjo">
            jagenjo
</a>          /
        <a class="text-bold wb-break-word" data-hydro-click='{"event_type":"explore.cl
ick","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY","click_vis
ual_representation":"REPOSITORY_NAME_HEADING","actor_id":null,"record_id":40006776,"orig
inating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="f35
c57e030fa0d745719a2f7ebb0d63d8025f9adf5beb0f674db3a4fc159026a" data-turbo="false" data-v
iew-component="true" href="/jagenjo/webglstudio.js">
            webglstudio.js
</a> </h3>
</div>
<div class="d-flex flex-items-center ml-3">
<div class="BtnGroup d-flex" data-view-component="true">
<a aria-label="You must be signed in to star a repository" class="tooltipped tooltipped-
s btn-sm btn BtnGroup-item color-bg-default" data-hydro-click='{"event_type":"authentica
tion.click","payload":{"location_in_page":"star button","repository_id":40006776,"auth_t
ype":"LOG_IN","originating_url":"https://github.com/topics/3d","user_id":null}}' data-hy
dro-click-hmac="7dc499e162c5b23695043978c42effb992717b9f1f71bf04b4394b25e89ab583" data-v
iew-component="true" href="/login?return_to=%2Fjagenjo%2Fwebglstudio.js" rel="nofollow">
 <svg aria-hidden="true" class="octicon octicon-star v-align-text-bottom d-inline-block
 mr-2" data-view-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="1
6">
<path d="M8 .25a.75.75 0 01.673.41l1.882 3.815 4.21.612a.75.75 0 01.416 1.279l-3.046 2.
97.719 4.192a.75.75 0 01-1.088.791L8 12.347l-3.766 1.98a.75.75 0 01-1.088-.79l.72-4.194
L.818 6.374a.75.75 0 01.416-1.28l4.21-.611L7.327.668A.75.75 0 018 .25zm0 2.445L6.615 5.5
a.75.75 0 01-.564.41l-3.097.45 2.24 2.184a.75.75 0 01.216.664l-.528 3.084 2.769-1.456a.7
5.75 0 01.698 0l2.77 1.456-.53-3.084a.75.75 0 01.216-.664l2.24-2.183-3.096-.45a.75.75 0
 01-.564-.41L8 2.694v.001z" fill-rule="evenodd"></path>
</svg><span class="d-inline" data-view-component="true">
          Star
</span> <span aria-label="4696 users starred this repository" class="Counter js-social-c
ount" data-pjax-replace="true" data-plural-suffix="users starred this repository" data-s
ingular-suffix="user starred this repository" data-turbo-replace="true" data-view-compon
ent="true" id="repo-stars-counter-star" title="4,696">4.7k</span>
</a> <button aria-label="You must be signed in to add this repository to a list" class
="btn-sm btn BtnGroup-item px-2" data-view-component="true" disabled="disabled" type="bu
tton"> <svg aria-hidden="true" class="octicon octicon-triangle-down" data-view-component
="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.427 7.427l3.396 3.396a.25.25 0 00.354 0l3.396-3.396A.25.25 0 0011.396 7H4.60
4a.25.25 0 00-.177.427z"></path>
</svg>
</button></div>
</div>
</div>
</div>
```

```html
<nav aria-label="Repository menu" class="tabnav px-3 mb-0" data-view-component="true">
<ul class="tabnav-tabs" data-view-component="true">
<li class="d-inline-flex" data-view-component="true">
<a aria-current="true" class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_typ
e":"explore.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITO
RY","click_visual_representation":"CODE_TAB","actor_id":null,"record_id":40006776,"origi
nating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="f321
f680c52321935a805d675178ac4fb7f429b5a3fb15cdea4e6955c0938bd9" data-turbo="false" data-vi
ew-component="true" href="/jagenjo/webglstudio.js" id="code-tab-40006776">
<svg aria-hidden="true" class="octicon octicon-code color-fg-default" data-view-componen
t="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.72 3.22a.75.75 0 011.06 1.06L2.06 8l3.72 3.72a.75.75 0 11-1.06 1.06L.47 8.53
a.75.75 0 010-1.06l4.25-4.25zm6.56 0a.75.75 0 10-1.06 1.06L13.94 8l-3.72 3.72a.75.75 0 1
01.06 1.06l4.25-4.25a.75.75 0 000-1.06l-4.25-4.25z" fill-rule="evenodd"></path>
</svg> Code


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_ISSUES","click_visual
_representation":"ISSUES_TAB","actor_id":null,"record_id":40006776,"originating_url":"ht
tps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="434afa7085e1334ab52
edc98bd4a94ea52e45d9b9e827b9953af80796726d98b" data-turbo="false" data-view-component="t
rue" href="/jagenjo/webglstudio.js/issues" id="issues-tab-40006776">
<svg aria-hidden="true" class="octicon octicon-issue-opened color-fg-muted" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 9.5a1.5 1.5 0 100-3 1.5 1.5 0 000 3z"></path><path d="M8 0a8 8 0 100 16A8 8
 0 008 0zM1.5 8a6.5 6.5 0 1113 0 6.5 6.5 0 01-13 0z" fill-rule="evenodd"></path>
</svg> Issues


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_PULL_REQUESTS","click
_visual_representation":"PULL_REQUESTS_TAB","actor_id":null,"record_id":40006776,"origin
ating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="516e5
1bcd836082d420cccf511b9f2416d4120961249cb29f4c68a2103602668" data-turbo="false" data-vie
w-component="true" href="/jagenjo/webglstudio.js/pulls" id="pull-requests-tab-40006776">
<svg aria-hidden="true" class="octicon octicon-git-pull-request color-fg-muted" data-vie
w-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M7.177 3.073L9.573.677A.25.25 0 0110 .854v4.792a.25.25 0 01-.427.177L7.177 3.42
7a.25.25 0 010-.354zM3.75 2.5a.75.75 0 100 1.5.75.75 0 000-1.5zm-2.25.75a2.25 2.25 0 113
 2.122v5.256a2.251 2.251 0 11-1.5 0V5.372A2.25 2.25 0 011.5 3.25zM11 2.5h-1V4h1a1 1 0 01
1 1v5.628a2.251 2.251 0 101.5 0V5A2.5 2.5 0 0011 2.5zm1 10.25a.75.75 0 111.5 0 .75.75 0
 01-1.5 0zM3.75 12a.75.75 0 100 1.5.75.75 0 000-1.5z" fill-rule="evenodd"></path>
</svg> Pull requests


</a></li>
</ul>
</nav>
<div class="color-bg-default rounded-bottom-2">
<div class="px-3 pt-3">
<p class="color-fg-muted mb-0"><div>A full open source 3D graphics editor in the browse
r, with scene editor, coding pad, graph editor, virtual file system, and many features m
ore.</div></p>
</div>
<div class="d-flex flex-wrap border-bottom color-border-muted px-3 pt-2 pb-2">
<a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explore.cli
ck","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visual_re
presentation":"TOPIC_TAG","actor_id":null,"record_id":197,"originating_url":"https://git
hub.com/topics/3d","user_id":null}}' data-hydro-click-hmac="1ff323f6520d19d01de7e87ed94f
1c14286d5c277d69011f1db463909f9b8d28" data-view-component="true" href="/topics/editor" t
itle="Topic: editor">
```

```
              editor
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":2119,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="d2e607f9d7b25ee5a5f68
ce176febce6c2f1236e5bf9ca64fdb5da5a01a19767" data-view-component="true" href="/topics/we
bgl" title="Topic: webgl">
              webgl
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":12202,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="713b91119201bf0ba3810
268d6c51302839f93cc633e66c4148461b70cb0fa5d" data-view-component="true" href="/topics/sh
aders" title="Topic: shaders">
              shaders
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":13080,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="517f6d4da5cec1ee4dfaf
e3eb3aa0f5dd7287c4404569367259665f587636917" data-view-component="true" href="/topics/re
ndering" title="Topic: rendering">
              rendering
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":39330,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="316a0b805899160a1916e
88e15b45d069e75cc9629b41696654ee0bf5373cf6f" data-view-component="true" href="/topics/we
bapp" title="Topic: webapp">
              webapp
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":60841,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="b25a52d204d990deae5ca
15a0568105a71434ae80a50fa278bd62b320d10f944" data-view-component="true" href="/topics/gr
aph-editor" title="Topic: graph-editor">
              graph-editor
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":118767,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="5e2d5e1385fd03c1b570
e413dff8d242204aaa7bf746dfb2a8aec4ab79e0f70b" data-view-component="true" href="/topics/w
ebtool" title="Topic: webtool">
              webtool
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":163363,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="4c71e2ec346cc41b8d06
d609eb2e36c8a4f9efc5c7b078a147cd192bd3c1edd6" data-view-component="true" href="/topics/s
cene-graph" title="Topic: scene-graph">
              scene-graph
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":238400,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="028a08f740516273aa7f
05a2f5db3c450593017549ffa99920f497664d796dbe" data-view-component="true" href="/topics/3
d" title="Topic: 3d">
              3d
</a> </div>
<div class="p-3">
<ul class="d-flex f6 list-style-none color-fg-muted">
<li class="mr-4">
              Updated
              <relative-time class="no-wrap" datetime="2020-08-03T13:01:21Z">Aug 3, 2020</
relative-time>
</li>
<li class="mr-4">
```

```
<span class="f6 my-1 ml-0">
<span class="repo-language-color" style="background-color: #f1e05a"></span>
<span itemprop="programmingLanguage">JavaScript</span>
</span>
</li>
</ul>
</div>
</div>
</article>
<article class="border rounded color-shadow-small color-bg-subtle my-4">
<div class="px-3">
<div class="d-flex flex-justify-between my-3">
<div class="d-flex flex-auto">
<span style="margin-top:2px">
<svg aria-hidden="true" class="octicon octicon-repo color-fg-muted mr-2" data-view-compo
nent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M2 2.5A2.5 2.5 0 014.5 0h8.75a.75.75 0 01.75.75v12.5a.75.75 0 01-.75.75h-2.5a.7
5.75 0 110-1.5h1.75v-2h-8a1 1 0 00-.714 1.7.75.75 0 01-1.072 1.05A2.495 2.495 0 012 11.5
v-9zm10.5-1V9h-8c-.356 0-.694.074-1 .208V2.5a1 1 0 011-1h8zM5 12.25v3.25a.25.25 0 00.4.2
l1.45-1.087a.25.25 0 01.3 0L8.6 15.7a.25.25 0 00.4-.2v-3.25a.25.25 0 00-.25-.25h-3.5a.2
5.25 0 00-.25.25z" fill-rule="evenodd"></path>
</svg>
</span>
<h3 class="f3 color-fg-muted text-normal lh-condensed">
<a data-hydro-click='{"event_type":"explore.click","payload":{"click_context":"REPOSITOR
Y_CARD","click_target":"OWNER","click_visual_representation":"REPOSITORY_OWNER_HEADIN
G","actor_id":null,"record_id":17000803,"originating_url":"https://github.com/topics/3
d","user_id":null}}' data-hydro-click-hmac="22b23cef9044043c11b17037d9ae62d342ff83aec1fe
01fb3deb33b088b8956c" data-turbo="false" data-view-component="true" href="/YadiraF">
            YadiraF
</a>          /
          <a class="text-bold wb-break-word" data-hydro-click='{"event_type":"explore.cl
ick","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY","click_vis
ual_representation":"REPOSITORY_NAME_HEADING","actor_id":null,"record_id":126008734,"ori
ginating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="4d
633272ee3575f2e51f2a3ab9e56ebf7be354ec3dadc0d1bf246d2f2c811049" data-turbo="false" data-
view-component="true" href="/YadiraF/PRNet">
            PRNet
</a> </h3>
</div>
<div class="d-flex flex-items-center ml-3">
<div class="BtnGroup d-flex" data-view-component="true">
<a aria-label="You must be signed in to star a repository" class="tooltipped tooltipped-
s btn-sm btn BtnGroup-item color-bg-default" data-hydro-click='{"event_type":"authentica
tion.click","payload":{"location_in_page":"star button","repository_id":126008734,"auth_
type":"LOG_IN","originating_url":"https://github.com/topics/3d","user_id":null}}' data-h
ydro-click-hmac="93715c4988652d7017be4bad768bae01c75d1c4205ff97a34a5b37a2c8f14bec" data-
view-component="true" href="/login?return_to=%2FYadiraF%2FPRNet" rel="nofollow"> <svg ar
ia-hidden="true" class="octicon octicon-star v-align-text-bottom d-inline-block mr-2" da
ta-view-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 .25a.75.75 0 01.673.418l1.882 3.815 4.21.612a.75.75 0 01.416 1.279l-3.046 2.
97.719 4.192a.75.75 0 01-1.088.791L8 12.347l-3.766 1.98a.75.75 0 01-1.088-.79l.72-4.194
L.818 6.374a.75.75 0 01.416-1.28l4.21-.611L7.327.668A.75.75 0 018 .25zm0 2.445L6.615 5.5
a.75.75 0 01-.564.41l-3.097.45 2.24 2.184a.75.75 0 01.216.664l-.528 3.084 2.769-1.456a.7
5.75 0 01.698 0l2.77 1.456-.53-3.084a.75.75 0 01.216-.664l2.24-2.183-3.096-.45a.75.75 0
 01-.564-.41L8 2.694v.001z" fill-rule="evenodd"></path>
</svg><span class="d-inline" data-view-component="true">
          Star
</span> <span aria-label="4674 users starred this repository" class="Counter js-social-c
ount" data-pjax-replace="true" data-plural-suffix="users starred this repository" data-s
ingular-suffix="user starred this repository" data-turbo-replace="true" data-view-compon
ent="true" id="repo-stars-counter-star" title="4,674">4.7k</span>
</a> <button aria-label="You must be signed in to add this repository to a list" class
="btn-sm btn BtnGroup-item px-2" data-view-component="true" disabled="disabled" type="bu
tton"> <svg aria-hidden="true" class="octicon octicon-triangle-down" data-view-component
="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
```

```html
<path d="M4.427 7.427l3.396 3.396a.25.25 0 00.354 0l3.396-3.396A.25.25 0 0011.396 7H4.60
4a.25.25 0 00-.177.427z"></path>
</svg>
</button></div>
</div>
</div>
</div>
<nav aria-label="Repository menu" class="tabnav px-3 mb-0" data-view-component="true">
<ul class="tabnav-tabs" data-view-component="true">
<li class="d-inline-flex" data-view-component="true">
<a aria-current="true" class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_typ
e":"explore.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITO
RY","click_visual_representation":"CODE_TAB","actor_id":null,"record_id":126008734,"orig
inating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="dae
86fc0a15b14d45a0881183a0d2ab8c0f6a331e65be610d9b36df95735556e" data-turbo="false" data-v
iew-component="true" href="/YadiraF/PRNet" id="code-tab-126008734">
<svg aria-hidden="true" class="octicon octicon-code color-fg-default" data-view-componen
t="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M4.72 3.22a.75.75 0 011.06 1.06L2.06 8l3.72 3.72a.75.75 0 11-1.06 1.06L.47 8.53
a.75.75 0 010-1.06l4.25-4.25zm6.56 0a.75.75 0 10-1.06 1.06L13.94 8l-3.72 3.72a.75.75 0 1
01.06 1.06l4.25-4.25a.75.75 0 000-1.06l-4.25-4.25z" fill-rule="evenodd"></path>
</svg> Code


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_ISSUES","click_visual
_representation":"ISSUES_TAB","actor_id":null,"record_id":126008734,"originating_url":"h
ttps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="5dd12242367f232f69
d14be8ce42f9b6100a4fd3aa562d252b43f603716440a7" data-turbo="false" data-view-component
="true" href="/YadiraF/PRNet/issues" id="issues-tab-126008734">
<svg aria-hidden="true" class="octicon octicon-issue-opened color-fg-muted" data-view-co
mponent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8 9.5a1.5 1.5 0 100-3 1.5 1.5 0 000 3z"></path><path d="M8 0a8 8 0 100 16A8 8
 0 008 0zM1.5 8a6.5 6.5 0 1113 0 6.5 6.5 0 01-13 0z" fill-rule="evenodd"></path>
</svg> Issues


</a></li>
<li class="d-inline-flex" data-view-component="true">
<a class="tabnav-tab f6 px-2 py-1" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY_PULL_REQUESTS","click
_visual_representation":"PULL_REQUESTS_TAB","actor_id":null,"record_id":126008734,"origi
nating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="2d1f
53817608beeba63a3349d866a2e11cc4dbfa953096d8a0799954195ee7f5" data-turbo="false" data-vi
ew-component="true" href="/YadiraF/PRNet/pulls" id="pull-requests-tab-126008734">
<svg aria-hidden="true" class="octicon octicon-git-pull-request color-fg-muted" data-vie
w-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M7.177 3.073L9.573.677A.25.25 0 0110 .854v4.792a.25.25 0 01-.427.177L7.177 3.42
7a.25.25 0 010-.354zM3.75 2.5a.75.75 0 100 1.5.75.75 0 000-1.5zm-2.25.75a2.25 2.25 0 113
 2.122v5.256a2.251 2.251 0 11-1.5 0V5.372A2.25 2.25 0 011.5 3.25zM11 2.5h-1V4h1a1 1 0 01
1 1v5.628a2.251 2.251 0 101.5 0V5A2.5 2.5 0 0011 2.5zm1 10.25a.75.75 0 111.5 0 .75.75 0
 01-1.5 0zM3.75 12a.75.75 0 100 1.5.75.75 0 000-1.5z" fill-rule="evenodd"></path>
</svg> Pull requests


</a></li>
</ul>
</nav>
<div class="color-bg-default rounded-bottom-2">
<div class="px-3 pt-3">
<p class="color-fg-muted mb-0"><div>Joint 3D Face Reconstruction and Dense Alignment wit
h Position Map Regression Network (ECCV 2018)</div></p>
</div>
<div class="d-flex flex-wrap border-bottom color-border-muted px-3 pt-2 pb-2">
```

```html
<a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explore.cli
ck","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visual_re
presentation":"TOPIC_TAG","actor_id":null,"record_id":44358,"originating_url":"https://g
ithub.com/topics/3d","user_id":null}}' data-hydro-click-hmac="fefeff767c43eb12718c590e0a
ac2383d2593ac5ac69ee5f2666583975cf08af" data-view-component="true" href="/topics/swap" t
itle="Topic: swap">
              swap
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":44723,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="5c8ee324e6a337fc56d0f
1cae75306ddeba62f4d30f1a7d5e0fdcd09158cae60" data-view-component="true" href="/topics/fa
ce" title="Topic: face">
              face
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":45051,"originating_url":"http
s://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="23dc0a45330a038434ef5
2c7806351e384f28e4abedbdf3ba7b59e7ccd5283d3" data-view-component="true" href="/topics/al
ignment" title="Topic: alignment">
              alignment
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":127904,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="131646d9046eaa06eb18
9b6acbd9e14df836fabc80c2d75db3a350c48224de2b" data-view-component="true" href="/topics/r
econstruction" title="Topic: reconstruction">
              reconstruction
</a> <a class="topic-tag topic-tag-link f6 mb-2" data-hydro-click='{"event_type":"explor
e.click","payload":{"click_context":"REPOSITORY_CARD","click_target":"TOPIC","click_visu
al_representation":"TOPIC_TAG","actor_id":null,"record_id":238400,"originating_url":"htt
ps://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="028a08f740516273aa7f
05a2f5db3c450593017549ffa99920f497664d796dbe" data-view-component="true" href="/topics/3
d" title="Topic: 3d">
              3d
</a> </div>
<div class="p-3">
<ul class="d-flex f6 list-style-none color-fg-muted">
<li class="mr-4">
              Updated
              <relative-time class="no-wrap" datetime="2022-07-25T23:50:26Z">Jul 25, 2022
</relative-time>
</li>
<li class="mr-4">
<span class="f6 my-1 ml-0">
<span class="repo-language-color" style="background-color: #3572A5"></span>
<span itemprop="programmingLanguage">Python</span>
</span>
</li>
</ul>
</div>
</div>
</article>
<!-- '"` --><!-- </textarea></xmp> --><form accept-charset="UTF-8" action="https://githu
b.com/topics/3d" class="ajax-pagination-form js-ajax-pagination" data-turbo="false" meth
od="get">
<input name="page" type="hidden" value="2"/>
<button class="ajax-pagination-btn btn btn-outline color-border-default f6 mt-0 width-fu
ll" data-disable-with="Loading more…" type="submit">
      Load more…
    </button>
</form>
</div>
<div class="col-md-4 col-lg-3">
<dl class="my-4">
<dt class="d-none">
```

```html
                    Wikipedia
        </dt>
<dd class="mb-1">
<svg aria-hidden="true" class="octicon octicon-link color-fg-muted mr-1" data-view-compo
nent="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M7.775 3.275a.75.75 0 001.06 1.06l1.25-1.25a2 2 0 112.83 2.83l-2.5 2.5a2 2 0 01
-2.83 0 .75.75 0 00-1.06 1.06 3.5 3.5 0 004.95 0l2.5-2.5a3.5 3.5 0 00-4.95-4.95l-1.25 1.
25zm-4.69 9.64a2 2 0 010-2.83l2.5-2.5a2 2 0 012.83 0 .75.75 0 001.06-1.06 3.5 3.5 0 00-
4.95 0l-2.5 2.5a3.5 3.5 0 004.95 4.95l1.25-1.25a.75.75 0 00-1.06-1.06l-1.25 1.25a2 2 0 0
1-2.83 0z" fill-rule="evenodd"></path>
</svg>
<a data-ga-click="Explore, go to Wikipedia entry, location:topic page" href="https://en.
wikipedia.org/wiki/3D_modeling">
<span class="css-truncate css-truncate-target" title="en.wikipedia.org/wiki/3D_modelin
g">
            Wikipedia
          </span>
</a>
</dd>
</dl>
</div>
</div>
</div>
</div>
</main>
</div>
<footer class="footer width-full container-lg p-responsive">
<h2 class="sr-only">Footer</h2>
<div class="position-relative d-flex flex-items-center pb-2 f6 color-fg-muted border-top
 color-border-muted flex-column-reverse flex-lg-row flex-wrap flex-lg-nowrap mt-6 pt-6">
<div class="list-style-none d-flex flex-wrap col-0 col-lg-2 flex-justify-start flex-lg-j
ustify-between mb-2 mb-lg-0">
<div class="mt-2 mt-lg-0 d-flex flex-items-center">
<a aria-label="Homepage" class="footer-octicon mr-2" href="https://github.com" title="Gi
tHub">
<svg aria-hidden="true" class="octicon octicon-mark-github" data-view-component="true" h
eight="24" version="1.1" viewbox="0 0 16 16" width="24">
<path d="M8 0C3.58 0 0 3.58 0 8c0 3.54 2.29 6.53 5.47 7.59.4.07.55-.17.55-.38 0-.19-.01
-.82-.01-1.49-2.01.37-2.53-.49-2.69-.94-.09-.23-.48-.94-.82-1.13-.28-.15-.68-.52-.01-.5
3.63-.01 1.08.58 1.23.82.72 1.21 1.87.87 2.33.66.07-.52.28-.87.51-1.07-1.78-.2-3.64-.89-
3.64-3.95 0-.87.31-1.59.82-2.15-.08-.2-.36-1.02.08-2.12 0 0 .67-.21 2.2.82.64-.18 1.32-.
27 2-.27.68 0 1.36.09 2 .27 1.53-1.04 2.2-.82 2.2-.82.44 1.1.16 1.92.08 2.12.51.56.82 1.
27.82 2.15 0 3.07-1.87 3.75-3.65 3.95.29.25.54.73.54 1.48 0 1.07-.01 1.93-.01 2.2 0 .21.
15.46.55.38A8.013 8.013 0 0016 8c0-4.42-3.58-8-8-8z" fill-rule="evenodd"></path>
</svg>
</a> <span>
        © 2022 GitHub, Inc.
        </span>
</div>
</div>
<nav aria-label="footer" class="col-12 col-lg-8">
<h3 class="sr-only" id="sr-footer-heading">Footer navigation</h3>
<ul aria-labelledby="sr-footer-heading" class="list-style-none d-flex flex-wrap col-12 f
lex-justify-center flex-lg-justify-between mb-2 mb-lg-0">
<li class="mr-3 mr-lg-0"><a data-analytics-event='{"category":"Footer","action":"go to t
erms","label":"text:terms"}' href="https://docs.github.com/en/github/site-policy/github-
terms-of-service">Terms</a></li>
<li class="mr-3 mr-lg-0"><a data-analytics-event='{"category":"Footer","action":"go to p
rivacy","label":"text:privacy"}' href="https://docs.github.com/en/github/site-policy/git
hub-privacy-statement">Privacy</a></li>
<li class="mr-3 mr-lg-0"><a data-analytics-event='{"category":"Footer","action":"go to s
ecurity","label":"text:security"}' href="https://github.com/security">Security</a></li>
<li class="mr-3 mr-lg-0"><a data-analytics-event='{"category":"Footer","action":"go to s
tatus","label":"text:status"}' href="https://www.githubstatus.com/">Status</a></li>
<li class="mr-3 mr-lg-0"><a data-ga-click="Footer, go to help, text:Docs" href="https://
docs.github.com">Docs</a></li>
```

```html
<li class="mr-3 mr-lg-0"><a data-analytics-event='{"category":"Footer","action":"go to c
ontact","label":"text:contact"}' href="https://support.github.com?tags=dotcom-footer">Co
ntact GitHub</a></li>
<li class="mr-3 mr-lg-0"><a data-analytics-event='{"category":"Footer","action":"go to P
ricing","label":"text:Pricing"}' href="https://github.com/pricing">Pricing</a></li>
<li class="mr-3 mr-lg-0"><a data-analytics-event='{"category":"Footer","action":"go to a
pi","label":"text:api"}' href="https://docs.github.com">API</a></li>
<li class="mr-3 mr-lg-0"><a data-analytics-event='{"category":"Footer","action":"go to t
raining","label":"text:training"}' href="https://services.github.com">Training</a></li>
<li class="mr-3 mr-lg-0"><a data-analytics-event='{"category":"Footer","action":"go to b
log","label":"text:blog"}' href="https://github.blog">Blog</a></li>
<li><a data-ga-click="Footer, go to about, text:about" href="https://github.com/about">A
bout</a></li>
</ul>
</nav>
</div>
<div class="d-flex flex-justify-center pb-6">
<span class="f6 color-fg-muted"></span>
</div>
</footer>
<div class="ajax-error-message flash flash-error" hidden="" id="ajax-error-message">
<svg aria-hidden="true" class="octicon octicon-alert" data-view-component="true" height
="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8.22 1.754a.25.25 0 00-.44 0L1.698 13.132a.25.25 0 00.22.368h12.164a.25.25 0 0
0.22-.368L8.22 1.754zm-1.763-.707c.659-1.234 2.427-1.234 3.086 0l6.082 11.378A1.75 1.75
 0 0114.082 15H1.918a1.75 1.75 0 01-1.543-2.575L6.457 1.047zM9 11a1 1 0 11-2 0 1 1 0 012
 0zm-.25-5.25a.75.75 0 00-1.5 0v2.5a.75.75 0 001.5 0v-2.5z" fill-rule="evenodd"></path>
</svg>
<button aria-label="Dismiss error" class="flash-close js-ajax-error-dismiss" type="butto
n">
<svg aria-hidden="true" class="octicon octicon-x" data-view-component="true" height="16"
 version="1.1" viewbox="0 0 16 16" width="16">
<path d="M3.72 3.72a.75.75 0 011.06 0L8 6.94l3.22-3.22a.75.75 0 111.06 1.06L9.06 8l3.22
 3.22a.75.75 0 11-1.06 1.06L8 9.06l-3.22 3.22a.75.75 0 01-1.06-1.06L6.94 8 3.72 4.78a.7
5.75 0 010-1.06z" fill-rule="evenodd"></path>
</svg>
</button>
    You can't perform that action at this time.
  </div>
<div class="js-stale-session-flash flash flash-warn flash-banner" hidden="">
<svg aria-hidden="true" class="octicon octicon-alert" data-view-component="true" height
="16" version="1.1" viewbox="0 0 16 16" width="16">
<path d="M8.22 1.754a.25.25 0 00-.44 0L1.698 13.132a.25.25 0 00.22.368h12.164a.25.25 0 0
0.22-.368L8.22 1.754zm-1.763-.707c.659-1.234 2.427-1.234 3.086 0l6.082 11.378A1.75 1.75
 0 0114.082 15H1.918a1.75 1.75 0 01-1.543-2.575L6.457 1.047zM9 11a1 1 0 11-2 0 1 1 0 012
 0zm-.25-5.25a.75.75 0 00-1.5 0v2.5a.75.75 0 001.5 0v-2.5z" fill-rule="evenodd"></path>
</svg>
<span class="js-stale-session-flash-signed-in" hidden="">You signed in with another tab
 or window. <a href="">Reload</a> to refresh your session.</span>
<span class="js-stale-session-flash-signed-out" hidden="">You signed out in another tab
 or window. <a href="">Reload</a> to refresh your session.</span>
</div>
<template id="site-details-dialog">
<details class="details-reset details-overlay details-overlay-dark lh-default color-fg-d
efault hx_rsm" open="">
<summary aria-label="Close dialog" role="button"></summary>
<details-dialog class="Box Box--overlay d-flex flex-column anim-fade-in fast hx_rsm-dial
og hx_rsm-modal">
<button aria-label="Close dialog" class="Box-btn-octicon m-0 btn-octicon position-absolu
te right-0 top-0" data-close-dialog="" type="button">
<svg aria-hidden="true" class="octicon octicon-x" data-view-component="true" height="16"
 version="1.1" viewbox="0 0 16 16" width="16">
<path d="M3.72 3.72a.75.75 0 011.06 0L8 6.94l3.22-3.22a.75.75 0 111.06 1.06L9.06 8l3.22
 3.22a.75.75 0 11-1.06 1.06L8 9.06l-3.22 3.22a.75.75 0 01-1.06-1.06L6.94 8 3.72 4.78a.7
5.75 0 010-1.06z" fill-rule="evenodd"></path>
</svg>
```

```
      </button>
      <div class="octocat-spinner my-6 js-details-dialog-spinner"></div>
      </details-dialog>
      </details>
      </template>
      <div class="Popover js-hovercard-content position-absolute" style="display: none; outlin
      e: none;" tabindex="0">
      <div class="Popover-message Popover-message--bottom-left Popover-message--large Box colo
      r-shadow-large" style="width:360px;">
      </div>
      </div>
      <template id="snippet-clipboard-copy-button">
      <div class="zeroclipboard-container position-absolute right-0 top-0">
      <clipboard-copy aria-label="Copy" class="ClipboardButton btn js-clipboard-copy m-2 p-0 t
      ooltipped-no-delay" data-copy-feedback="Copied!" data-tooltip-direction="w">
      <svg aria-hidden="true" class="octicon octicon-copy js-clipboard-copy-icon m-2" data-vie
      w-component="true" height="16" version="1.1" viewbox="0 0 16 16" width="16">
      <path d="M0 6.75C0 5.784.784 5 1.75 5h1.5a.75.75 0 010 1.5h-1.5a.25.25 0 00-.25.25v7.5c0
       .138.112.25.25.25h7.5a.25.25 0 00.25-.25v-1.5a.75.75 0 011.5 0v1.5A1.75 1.75 0 019.25 1
      6h-7.5A1.75 1.75 0 010 14.25v-7.5z" fill-rule="evenodd"></path><path d="M5 1.75C5 .784
       5.784 0 6.75 0h7.5C15.216 0 16 .784 16 1.75v7.5A1.75 1.75 0 0114.25 11h-7.5A1.75 1.75 0
       015 9.25v-7.5zm1.75-.25a.25.25 0 00-.25.25v7.5c0 .138.112.25.25.25h7.5a.25.25 0 00.25-.
      25v-7.5a.25.25 0 00-.25-.25h-7.5z" fill-rule="evenodd"></path>
      </svg>
      <svg aria-hidden="true" class="octicon octicon-check js-clipboard-check-icon color-fg-su
      ccess d-none m-2" data-view-component="true" height="16" version="1.1" viewbox="0 0 16 1
      6" width="16">
      <path d="M13.78 4.22a.75.75 0 010 1.06l-7.25 7.25a.75.75 0 01-1.06 0L2.22 9.28a.75.75 0
       011.06-1.06L6 10.94l6.72-6.72a.75.75 0 011.06 0z" fill-rule="evenodd"></path>
      </svg>
      </clipboard-copy>
      </div>
      </template>
      </body>
      </html>
```

In [121…
```python
h3_selection_class='f3 color-fg-muted text-normal lh-condensed'
repo_tags=topic_doc.find_all('h3',{'class': h3_selection_class})
```

In [122…
```python
len(repo_tags)
```

Out[122]: 20

In [123…
```python
repo_tags[0]
```

Out[123]:
```html
<h3 class="f3 color-fg-muted text-normal lh-condensed">
<a data-hydro-click='{"event_type":"explore.click","payload":{"click_context":"REPOSITOR
Y_CARD","click_target":"OWNER","click_visual_representation":"REPOSITORY_OWNER_HEADIN
G","actor_id":null,"record_id":97088,"originating_url":"https://github.com/topics/3d","u
ser_id":null}}' data-hydro-click-hmac="4bdbc49d3c05ae7f70b531fbce709a384200b0768554e0172
950286a8db30940" data-turbo="false" data-view-component="true" href="/mrdoob">
          mrdoob
</a>          /
          <a class="text-bold wb-break-word" data-hydro-click='{"event_type":"explore.cl
ick","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY","click_vis
ual_representation":"REPOSITORY_NAME_HEADING","actor_id":null,"record_id":576201,"origin
ating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="517d3
d5cb9d89752156923904a4238816bc9b51ab7772f3e3644ce897d8dd4e5" data-turbo="false" data-vie
w-component="true" href="/mrdoob/three.js">
          three.js
</a> </h3>
```

In [124…
```python
repo_tags[1]
```

Out[124]:
```html
<h3 class="f3 color-fg-muted text-normal lh-condensed">
```

```
              <a data-hydro-click='{"event_type":"explore.click","payload":{"click_context":"REPOSITOR
Y_CARD","click_target":"OWNER","click_visual_representation":"REPOSITORY_OWNER_HEADIN
G","actor_id":null,"record_id":509841,"originating_url":"https://github.com/topics/3
d","user_id":null}}' data-hydro-click-hmac="760dcd7b253cb1a27d9b1a8675e86db885295be4e0d8
d9fa7397adf923075d36" data-turbo="false" data-view-component="true" href="/libgdx">
                    libgdx
</a>              /
              <a class="text-bold wb-break-word" data-hydro-click='{"event_type":"explore.cl
ick","payload":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY","click_vis
ual_representation":"REPOSITORY_NAME_HEADING","actor_id":null,"record_id":5373551,"origi
nating_url":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="ff9d
8fbd4b6a268d54aa44ebd06922a789e146ae9d21db01b8ba7839646f5507" data-turbo="false" data-vi
ew-component="true" href="/libgdx/libgdx">
                    libgdx
</a> </h3>
```

In [126… `a_tags=repo_tags[0].find_all('a')`

In [127… `a_tags`

Out[127]:
```
[<a data-hydro-click='{"event_type":"explore.click","payload":{"click_context":"REPOSITO
RY_CARD","click_target":"OWNER","click_visual_representation":"REPOSITORY_OWNER_HEADIN
G","actor_id":null,"record_id":97088,"originating_url":"https://github.com/topics/3d","u
ser_id":null}}' data-hydro-click-hmac="4bdbc49d3c05ae7f70b531fbce709a384200b0768554e0172
950286a8db30940" data-turbo="false" data-view-component="true" href="/mrdoob">
                    mrdoob
 </a>,
 <a class="text-bold wb-break-word" data-hydro-click='{"event_type":"explore.click","pay
load":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY","click_visual_repre
sentation":"REPOSITORY_NAME_HEADING","actor_id":null,"record_id":576201,"originating_ur
l":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="517d3d5cb9d89
752156923904a4238816bc9b51ab7772f3e3644ce897d8dd4e5" data-turbo="false" data-view-compon
ent="true" href="/mrdoob/three.js">
                    three.js
 </a>]
```

In [128… `a_tags[0]`

Out[128]:
```
<a data-hydro-click='{"event_type":"explore.click","payload":{"click_context":"REPOSITOR
Y_CARD","click_target":"OWNER","click_visual_representation":"REPOSITORY_OWNER_HEADIN
G","actor_id":null,"record_id":97088,"originating_url":"https://github.com/topics/3d","u
ser_id":null}}' data-hydro-click-hmac="4bdbc49d3c05ae7f70b531fbce709a384200b0768554e0172
950286a8db30940" data-turbo="false" data-view-component="true" href="/mrdoob">
                    mrdoob
</a>
```

username

In [129… `a_tags[0].text.strip()`

Out[129]: `'mrdoob'`

repo name

In [130… `a_tags[1]`

Out[130]:
```
<a class="text-bold wb-break-word" data-hydro-click='{"event_type":"explore.click","payl
oad":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY","click_visual_repres
entation":"REPOSITORY_NAME_HEADING","actor_id":null,"record_id":576201,"originating_ur
l":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="517d3d5cb9d89
752156923904a4238816bc9b51ab7772f3e3644ce897d8dd4e5" data-turbo="false" data-view-compon
ent="true" href="/mrdoob/three.js">
                    three.js
</a>
```

```
In [131...  a_tags[1].text.strip()
```

Out[131]:   'three.js'

url name

```
In [132...  base_url='https://github.com'
            repo_url=base_url + a_tags[1]['href']
            print(repo_url)
```

https://github.com/mrdoob/three.js

no. of stars

```
In [133...  star_tags=topic_doc.find_all('span', {'class': 'Counter js-social-count'})
```

```
In [134...  len(star_tags)
```

Out[134]:   20

```
In [135...  star_tags[0].text
```

Out[135]:   '84.8k'

```
In [136...  star_tags[0].text.strip()
```

Out[136]:   '84.8k'

```
In [137...  def parse_star_count(stars_str):
                stars_str= stars_str.strip()
                if stars_str[-1]=='k':
                    return  int (float(stars_str[:-1]) * 1000)
                return int(stars_str)
```

stars_str='69.7k'

stars_str[-1]

int(float(stars_str[:-1]) *1000)

```
In [138...  parse_star_count(star_tags[0].text.strip())
```

Out[138]:   84800

```
In [139...  star_tags
```

Out[139]:   [<span aria-label="84789 users starred this repository" class="Counter js-social-count"
            data-pjax-replace="true" data-plural-suffix="users starred this repository" data-singula
            r-suffix="user starred this repository" data-turbo-replace="true" data-view-component="t
            rue" id="repo-stars-counter-star" title="84,789">84.8k,
             <span aria-label="20386 users starred this repository" class="Counter js-social-count"
            data-pjax-replace="true" data-plural-suffix="users starred this repository" data-singula
            r-suffix="user starred this repository" data-turbo-replace="true" data-view-component="t
            rue" id="repo-stars-counter-star" title="20,386">20.4k,
             <span aria-label="19280 users starred this repository" class="Counter js-social-count"
            data-pjax-replace="true" data-plural-suffix="users starred this repository" data-singula
            r-suffix="user starred this repository" data-turbo-replace="true" data-view-component="t
            rue" id="repo-stars-counter-star" title="19,280">19.3k,
             <span aria-label="18220 users starred this repository" class="Counter js-social-count"
            data-pjax-replace="true" data-plural-suffix="users starred this repository" data-singula
            r-suffix="user starred this repository" data-turbo-replace="true" data-view-component="t
```

rue" id="repo-stars-counter-star" title="18,220">18.2k</span>,
 <span aria-label="14523 users starred this repository" class="Counter js-social-count"
data-pjax-replace="true" data-plural-suffix="users starred this repository" data-singula
r-suffix="user starred this repository" data-turbo-replace="true" data-view-component="t
rue" id="repo-stars-counter-star" title="14,523">14.5k</span>,
 <span aria-label="14486 users starred this repository" class="Counter js-social-count"
data-pjax-replace="true" data-plural-suffix="users starred this repository" data-singula
r-suffix="user starred this repository" data-turbo-replace="true" data-view-component="t
rue" id="repo-stars-counter-star" title="14,486">14.5k</span>,
 <span aria-label="13573 users starred this repository" class="Counter js-social-count"
data-pjax-replace="true" data-plural-suffix="users starred this repository" data-singula
r-suffix="user starred this repository" data-turbo-replace="true" data-view-component="t
rue" id="repo-stars-counter-star" title="13,573">13.6k</span>,
 <span aria-label="12014 users starred this repository" class="Counter js-social-count"
data-pjax-replace="true" data-plural-suffix="users starred this repository" data-singula
r-suffix="user starred this repository" data-turbo-replace="true" data-view-component="t
rue" id="repo-stars-counter-star" title="12,014">12k</span>,
 <span aria-label="9323 users starred this repository" class="Counter js-social-count" d
ata-pjax-replace="true" data-plural-suffix="users starred this repository" data-singular
-suffix="user starred this repository" data-turbo-replace="true" data-view-component="tr
ue" id="repo-stars-counter-star" title="9,323">9.3k</span>,
 <span aria-label="9134 users starred this repository" class="Counter js-social-count" d
ata-pjax-replace="true" data-plural-suffix="users starred this repository" data-singular
-suffix="user starred this repository" data-turbo-replace="true" data-view-component="tr
ue" id="repo-stars-counter-star" title="9,134">9.1k</span>,
 <span aria-label="8272 users starred this repository" class="Counter js-social-count" d
ata-pjax-replace="true" data-plural-suffix="users starred this repository" data-singular
-suffix="user starred this repository" data-turbo-replace="true" data-view-component="tr
ue" id="repo-stars-counter-star" title="8,272">8.3k</span>,
 <span aria-label="7305 users starred this repository" class="Counter js-social-count" d
ata-pjax-replace="true" data-plural-suffix="users starred this repository" data-singular
-suffix="user starred this repository" data-turbo-replace="true" data-view-component="tr
ue" id="repo-stars-counter-star" title="7,305">7.3k</span>,
 <span aria-label="7200 users starred this repository" class="Counter js-social-count" d
ata-pjax-replace="true" data-plural-suffix="users starred this repository" data-singular
-suffix="user starred this repository" data-turbo-replace="true" data-view-component="tr
ue" id="repo-stars-counter-star" title="7,200">7.2k</span>,
 <span aria-label="6392 users starred this repository" class="Counter js-social-count" d
ata-pjax-replace="true" data-plural-suffix="users starred this repository" data-singular
-suffix="user starred this repository" data-turbo-replace="true" data-view-component="tr
ue" id="repo-stars-counter-star" title="6,392">6.4k</span>,
 <span aria-label="5540 users starred this repository" class="Counter js-social-count" d
ata-pjax-replace="true" data-plural-suffix="users starred this repository" data-singular
-suffix="user starred this repository" data-turbo-replace="true" data-view-component="tr
ue" id="repo-stars-counter-star" title="5,540">5.5k</span>,
 <span aria-label="4958 users starred this repository" class="Counter js-social-count" d
ata-pjax-replace="true" data-plural-suffix="users starred this repository" data-singular
-suffix="user starred this repository" data-turbo-replace="true" data-view-component="tr
ue" id="repo-stars-counter-star" title="4,958">5k</span>,
 <span aria-label="4955 users starred this repository" class="Counter js-social-count" d
ata-pjax-replace="true" data-plural-suffix="users starred this repository" data-singular
-suffix="user starred this repository" data-turbo-replace="true" data-view-component="tr
ue" id="repo-stars-counter-star" title="4,955">5k</span>,
 <span aria-label="4701 users starred this repository" class="Counter js-social-count" d
ata-pjax-replace="true" data-plural-suffix="users starred this repository" data-singular
-suffix="user starred this repository" data-turbo-replace="true" data-view-component="tr
ue" id="repo-stars-counter-star" title="4,701">4.7k</span>,
 <span aria-label="4696 users starred this repository" class="Counter js-social-count" d
ata-pjax-replace="true" data-plural-suffix="users starred this repository" data-singular
-suffix="user starred this repository" data-turbo-replace="true" data-view-component="tr
ue" id="repo-stars-counter-star" title="4,696">4.7k</span>,
 <span aria-label="4674 users starred this repository" class="Counter js-social-count" d
ata-pjax-replace="true" data-plural-suffix="users starred this repository" data-singular
-suffix="user starred this repository" data-turbo-replace="true" data-view-component="tr
ue" id="repo-stars-counter-star" title="4,674">4.7k</span>]

```
In [140...   a_tags
```

```
Out[140]:   [<a data-hydro-click='{"event_type":"explore.click","payload":{"click_context":"REPOSITO
            RY_CARD","click_target":"OWNER","click_visual_representation":"REPOSITORY_OWNER_HEADIN
            G","actor_id":null,"record_id":97088,"originating_url":"https://github.com/topics/3d","u
            ser_id":null}}' data-hydro-click-hmac="4bdbc49d3c05ae7f70b531fbce709a384200b0768554e0172
            950286a8db30940" data-turbo="false" data-view-component="true" href="/mrdoob">
                          mrdoob
             </a>,
             <a class="text-bold wb-break-word" data-hydro-click='{"event_type":"explore.click","pay
            load":{"click_context":"REPOSITORY_CARD","click_target":"REPOSITORY","click_visual_repre
            sentation":"REPOSITORY_NAME_HEADING","actor_id":null,"record_id":576201,"originating_ur
            l":"https://github.com/topics/3d","user_id":null}}' data-hydro-click-hmac="517d3d5cb9d89
            752156923904a4238816bc9b51ab7772f3e3644ce897d8dd4e5" data-turbo="false" data-view-compon
            ent="true" href="/mrdoob/three.js">
                          three.js
             </a>]
```

```
In [141...   topic_url
```

```
Out[141]:   ['https://github.com/topics/3d',
             'https://github.com/topics/ajax',
             'https://github.com/topics/algorithm',
             'https://github.com/topics/amphp',
             'https://github.com/topics/android',
             'https://github.com/topics/angular',
             'https://github.com/topics/ansible',
             'https://github.com/topics/api',
             'https://github.com/topics/arduino',
             'https://github.com/topics/aspnet',
             'https://github.com/topics/atom',
             'https://github.com/topics/awesome',
             'https://github.com/topics/aws',
             'https://github.com/topics/azure',
             'https://github.com/topics/babel',
             'https://github.com/topics/bash',
             'https://github.com/topics/bitcoin',
             'https://github.com/topics/bootstrap',
             'https://github.com/topics/bot',
             'https://github.com/topics/c',
             'https://github.com/topics/chrome',
             'https://github.com/topics/chrome-extension',
             'https://github.com/topics/cli',
             'https://github.com/topics/clojure',
             'https://github.com/topics/code-quality',
             'https://github.com/topics/code-review',
             'https://github.com/topics/compiler',
             'https://github.com/topics/continuous-integration',
             'https://github.com/topics/covid-19',
             'https://github.com/topics/cpp']
```

convertinf the topic_repo_dict to pandas dataframe

Final Code

```
In [142...   import os
            def get_topic_page(topic_urls):
                 # Download the page
                response =requests.get(topic_urls)
                # Check succesful response
                if response.status_code!=200:
                    raise Exception('Failed to load page {}' .format(topic_urls))
                 #parse using Beautiful soup
                topics_doc= BeautifulSoup(response.text,'html.parser')
```

```python
        return topics_doc

def get_repo_info(h3_tag,star_tags):
    # return all the req. info about a repo.
    a_tags2=h3_tag.find_all('a')
    username = a_tags2[0].text.strip()
    repo_name = a_tags2[1].text.strip()
    repo_url=base_url +  a_tags2[1]['href']
    stars = parse_star_count(star_tags.text.strip())
    return username ,repo_name,stars,repo_url

def get_topic_repos(topics_doc):
     # get all h3 tags containing repo title ,repo URL and Username
    h3_selection_class='f3 color-fg-muted text-normal lh-condensed'
    repo_tags=topics_doc.find_all('h3',{'class': h3_selection_class})
    #Get STar tags
    star_tags=topics_doc.find_all('span', {'class': 'Counter js-social-count'})


    # topic_repo_dict

    topic_repos_dict={
        'username':[],
        'repo_name':[],
        'stars':[],
        'repo_url':[]
    }

    #Get repo info
    for i in range (len(repo_tags)):
        repo_info=get_repo_info(repo_tags[i],star_tags[i])
        topic_repos_dict['username'].append(repo_info[0])
        topic_repos_dict['repo_name'].append(repo_info[1])
        topic_repos_dict['stars'].append(repo_info[2])
        topic_repos_dict['repo_url'].append(repo_info[3])

    return pd.DataFrame(topic_repos_dict)

def scrape_topic(topic_url,path):
    if os.path.exists(path):
        print("The file {} already exists.Skipping...".format(path))
        return
    topic_df=get_topic_repos(get_topic_page(topic_url))
    topic_df.to_csv(path ,index=None)
```

In [ ]:

In [143…   `topic_url`

Out[143]:
```
['https://github.com/topics/3d',
 'https://github.com/topics/ajax',
 'https://github.com/topics/algorithm',
 'https://github.com/topics/amphp',
 'https://github.com/topics/android',
 'https://github.com/topics/angular',
 'https://github.com/topics/ansible',
 'https://github.com/topics/api',
 'https://github.com/topics/arduino',
 'https://github.com/topics/aspnet',
 'https://github.com/topics/atom',
 'https://github.com/topics/awesome',
 'https://github.com/topics/aws',
 'https://github.com/topics/azure',
 'https://github.com/topics/babel',
 'https://github.com/topics/bash',
```

```
    'https://github.com/topics/bitcoin',
    'https://github.com/topics/bootstrap',
    'https://github.com/topics/bot',
    'https://github.com/topics/c',
    'https://github.com/topics/chrome',
    'https://github.com/topics/chrome-extension',
    'https://github.com/topics/cli',
    'https://github.com/topics/clojure',
    'https://github.com/topics/code-quality',
    'https://github.com/topics/code-review',
    'https://github.com/topics/compiler',
    'https://github.com/topics/continuous-integration',
    'https://github.com/topics/covid-19',
    'https://github.com/topics/cpp']
```

In [144… `url4=topic_url[4]`

In [145… `url4`

Out[145]: `'https://github.com/topics/android'`

In [146… `topic4_doc=get_topic_page(url4)`

In [147… `response =requests.get(url4)`

In [148… `response.status_code`

Out[148]: `200`

In [149… `topic4_repos=get_topic_repos(topic4_doc)`

all the repos of topic 4 are below:

In [150… `topic4_repos`

Out[150]:

	username	repo_name	stars	repo_url
0	flutter	flutter	144000	https://github.com/flutter/flutter
1	justjavac	free-programming-books-zh_CN	95300	https://github.com/justjavac/free-programming-...
2	Genymobile	scrcpy	69700	https://github.com/Genymobile/scrcpy
3	Hack-with-Github	Awesome-Hacking	55200	https://github.com/Hack-with-Github/Awesome-Ha...
4	google	material-design-icons	46400	https://github.com/google/material-design-icons
5	wasabeef	awesome-android-ui	43700	https://github.com/wasabeef/awesome-android-ui
6	square	okhttp	42700	https://github.com/square/okhttp
7	Solido	awesome-flutter	42400	https://github.com/Solido/awesome-flutter
8	android	architecture-samples	41400	https://github.com/android/architecture-samples
9	square	retrofit	40400	https://github.com/square/retrofit
10	dcloudio	uni-app	37100	https://github.com/dcloudio/uni-app
11	fastlane	fastlane	35700	https://github.com/fastlane/fastlane
12	PhilJay	MPAndroidChart	35500	https://github.com/PhilJay/MPAndroidChart
13	airbnb	lottie-android	33100	https://github.com/airbnb/lottie-android
14	bumptech	glide	32900	https://github.com/bumptech/glide

15	shadowsocks	shadowsocks-android	32800	https://github.com/shadowsocks/shadowsocks-and...
16	laurent22	joplin	31800	https://github.com/laurent22/joplin
17	skylot	jadx	31400	https://github.com/skylot/jadx
18	Blankj	AndroidUtilCode	31300	https://github.com/Blankj/AndroidUtilCode
19	xitu	gold-miner	31100	https://github.com/xitu/gold-miner

In [151... `topic4_repos=get_topic_repos(get_topic_page(topic_url[4]))`

In [152... `topic_url[4]`

Out[152]: `'https://github.com/topics/android'`

In [153... `topic4_repos`

Out[153]:

	username	repo_name	stars	repo_url
0	flutter	flutter	144000	https://github.com/flutter/flutter
1	justjavac	free-programming-books-zh_CN	95300	https://github.com/justjavac/free-programming-...
2	Genymobile	scrcpy	69700	https://github.com/Genymobile/scrcpy
3	Hack-with-Github	Awesome-Hacking	55200	https://github.com/Hack-with-Github/Awesome-Ha...
4	google	material-design-icons	46400	https://github.com/google/material-design-icons
5	wasabeef	awesome-android-ui	43700	https://github.com/wasabeef/awesome-android-ui
6	square	okhttp	42700	https://github.com/square/okhttp
7	Solido	awesome-flutter	42400	https://github.com/Solido/awesome-flutter
8	android	architecture-samples	41400	https://github.com/android/architecture-samples
9	square	retrofit	40400	https://github.com/square/retrofit
10	dcloudio	uni-app	37100	https://github.com/dcloudio/uni-app
11	fastlane	fastlane	35700	https://github.com/fastlane/fastlane
12	PhilJay	MPAndroidChart	35500	https://github.com/PhilJay/MPAndroidChart
13	airbnb	lottie-android	33100	https://github.com/airbnb/lottie-android
14	bumptech	glide	32900	https://github.com/bumptech/glide
15	shadowsocks	shadowsocks-android	32800	https://github.com/shadowsocks/shadowsocks-and...
16	laurent22	joplin	31800	https://github.com/laurent22/joplin
17	skylot	jadx	31400	https://github.com/skylot/jadx
18	Blankj	AndroidUtilCode	31300	https://github.com/Blankj/AndroidUtilCode
19	xitu	gold-miner	31100	https://github.com/xitu/gold-miner

In [154... `topic4_repos.to_csv('Android.csv' , index=None)`

In [155... `topic6_repos=get_topic_repos(get_topic_page(topic_url[6]))`

In [156... `topic6_repos`

Out[156]: | username | repo_name | stars | repo_url |

0	ansible	ansible	54300	https://github.com/ansible/ansible
1	bregman-arie	devops-exercises	29000	https://github.com/bregman-arie/devops-exercises
2	trailofbits	algo	26000	https://github.com/trailofbits/algo
3	StreisandEffect	streisand	22800	https://github.com/StreisandEffect/streisand
4	MichaelCade	90DaysOfDevOps	16900	https://github.com/MichaelCade/90DaysOfDevOps
5	kubernetes-sigs	kubespray	12800	https://github.com/kubernetes-sigs/kubespray
6	ansible	awx	11300	https://github.com/ansible/awx
7	easzlab	kubeasz	8400	https://github.com/easzlab/kubeasz
8	geerlingguy	ansible-for-devops	6100	https://github.com/geerlingguy/ansible-for-devops
9	khuedoan	homelab	6100	https://github.com/khuedoan/homelab
10	ansible-semaphore	semaphore	5200	https://github.com/ansible-semaphore/semaphore
11	Tikam02	DevOps-Guide	5100	https://github.com/Tikam02/DevOps-Guide
12	geerlingguy	mac-dev-playbook	4800	https://github.com/geerlingguy/mac-dev-playbook
13	rundeck	rundeck	4700	https://github.com/rundeck/rundeck
14	KubeOperator	KubeOperator	4400	https://github.com/KubeOperator/KubeOperator
15	clong	DetectionLab	3800	https://github.com/clong/DetectionLab
16	netbootxyz	netboot.xyz	3500	https://github.com/netbootxyz/netboot.xyz
17	ansible-community	molecule	3400	https://github.com/ansible-community/molecule
18	werf	werf	3300	https://github.com/werf/werf
19	opendevops-cn	opendevops	3300	https://github.com/opendevops-cn/opendevops

In [157...
```python
topic6_repos.to_csv('Ansible.csv' , index=None)
```

Write a single functions to :

```
1.Get the List of topics from the topics page
2.Get the list of top repos from the individual topic page
3.For each topic ,create a CSV of the top repos for the topic
```

In [158...
```python
def get_topics_titles(doc):
    selection_class='f3 lh-condensed mb-0 mt-1 Link--primary'
    topics_titles_p_tags=doc.find_all('p',{'class':selection_class})
    topics_titles = []
    for tag in topics_titles_p_tags:
        topics_titles.append(tag.text)
    return topics_titles

def get_topics_descs(doc):
    desc_selection_class='f5 color-fg-muted mb-0 mt-1'
    topics_descriptions_p_tags=doc.find_all('p',{'class':desc_selection_class})
    topics_descriptions=[]
    for description in topics_descriptions_p_tags:
        topics_descriptions.append(description.text.strip())
    return topics_descriptions


def get_topics_urls(doc):
    topics_link_tags=doc.find_all('a',{'class':'no-underline flex-1 d-flex flex-column'}
```

```python
        topics_urls=[]
        base_url='https://github.com'
        for url in topics_link_tags:
                {
                topics_urls.append(base_url + url['href'])
                }
        return topics_urls

###Function to scrape all topics from github/topic

def scrape_topics():
        topics_urls='https://github.com/topics'
        response =requests.get(topics_urls)
        if response.status_code !=200:
                raise Exception('failed to load page{}'.format(topics_urls))
                doc1= BeautifulSoup(response.text,'html.parser')
        topics_dict= {
                'title':get_topics_titles(doc),
                'Descriptions':get_topics_descs(doc),
                'url':get_topics_urls(doc),
        }
        return pd.DataFrame(topics_dict)
```

In [159… `get_topics_descs(doc)`

Out[159]: ['3D modeling is the process of virtually developing the surface and structure of a 3D o
bject.',
 'Ajax is a technique for creating interactive web applications.',
 'Algorithms are self-contained sequences that carry out a variety of tasks.',
 'Amp is a non-blocking concurrency library for PHP.',
 'Android is an operating system built by Google designed for mobile devices.',
 'Angular is an open source web application platform.',
 'Ansible is a simple and powerful automation engine.',
 'An API (Application Programming Interface) is a collection of protocols and subroutine
s for building software.',
 'Arduino is an open source hardware and software company and maker community.',
 'ASP.NET is a web framework for building modern web apps and services.',
 'Atom is a open source text editor built with web technologies.',
 'An awesome list is a list of awesome things curated by the community.',
 'Amazon Web Services provides on-demand cloud computing platforms on a subscription bas
is.',
 'Azure is a cloud computing service created by Microsoft.',
 'Babel is a compiler for writing next generation JavaScript, today.',
 'Bash is a shell and command language interpreter for the GNU operating system.',
 'Bitcoin is a cryptocurrency developed by Satoshi Nakamoto.',
 'Bootstrap is an HTML, CSS, and JavaScript framework.',
 'A bot is an application that runs automated tasks over the Internet.',
 'C is a general purpose programming language that first appeared in 1972.',
 'Chrome is a web browser from the tech company Google.',
 'Chrome extensions enable users to customize the Chrome browsing experience.',

```
 'A CLI, or command-line interface, is a console that helps users issue commands to a pr
ogram.',
 'Clojure is a dynamic, general-purpose programming language.',
 'Automate your code review with style, quality, security, and test-coverage checks when
you need them.',
 'Ensure your code meets quality standards and ship with confidence.',
 'Compilers are software that translate higher-level programming languages to lower-leve
l languages (e.g. machine code).',
 'Automatically build and test your code as you push it upstream, preventing bugs from b
eing deployed to production.',
 'The coronavirus disease 2019 (COVID-19) is an infectious disease caused by SARS-CoV-
2.',
 'C++ is a general purpose and object-oriented programming language.']
```

In [ ]:

In [160...
```python
import os
help(os.makedirs)
```

```
Help on function makedirs in module os:

makedirs(name, mode=511, exist_ok=False)
    makedirs(name [, mode=0o777][, exist_ok=False])

    Super-mkdir; create a leaf directory and all intermediate ones.  Works like
    mkdir, except that any intermediate path segment (not just the rightmost)
    will be created if it does not exist. If the target directory already
    exists, raise an OSError if exist_ok is False. Otherwise no exception is
    raised.  This is recursive.
```

Function "scape_topics" will scrape all the topicsfrom github topics page

In [161...
```python
scrape_topics()
```

Out[161]:

	title	Descriptions	url
0	3D	3D modeling is the process of virtually develo...	https://github.com/topics/3d
1	Ajax	Ajax is a technique for creating interactive w...	https://github.com/topics/ajax
2	Algorithm	Algorithms are self-contained sequences that c...	https://github.com/topics/algorithm
3	Amp	Amp is a non-blocking concurrency library for ...	https://github.com/topics/amphp
4	Android	Android is an operating system built by Google...	https://github.com/topics/android
5	Angular	Angular is an open source web application plat...	https://github.com/topics/angular
6	Ansible	Ansible is a simple and powerful automation en...	https://github.com/topics/ansible
7	API	An API (Application Programming Interface) is ...	https://github.com/topics/api
8	Arduino	Arduino is an open source hardware and softwar...	https://github.com/topics/arduino
9	ASP.NET	ASP.NET is a web framework for building modern...	https://github.com/topics/aspnet
10	Atom	Atom is a open source text editor built with w...	https://github.com/topics/atom
11	Awesome Lists	An awesome list is a list of awesome things cu...	https://github.com/topics/awesome
12	Amazon Web	Amazon Web Services provides on-demand	https://github.com/topics/aws

	Services		cloud c...
13	Azure	Azure is a cloud computing service created by ...	https://github.com/topics/azure
14	Babel	Babel is a compiler for writing next generatio...	https://github.com/topics/babel
15	Bash	Bash is a shell and command language interpret...	https://github.com/topics/bash
16	Bitcoin	Bitcoin is a cryptocurrency developed by Satos...	https://github.com/topics/bitcoin
17	Bootstrap	Bootstrap is an HTML, CSS, and JavaScript fram...	https://github.com/topics/bootstrap
18	Bot	A bot is an application that runs automated ta...	https://github.com/topics/bot
19	C	C is a general purpose programming language th...	https://github.com/topics/c
20	Chrome	Chrome is a web browser from the tech company ...	https://github.com/topics/chrome
21	Chrome extension	Chrome extensions enable users to customize th...	https://github.com/topics/chrome-extension
22	Command line interface	A CLI, or command-line interface, is a console...	https://github.com/topics/cli
23	Clojure	Clojure is a dynamic, general-purpose programm...	https://github.com/topics/clojure
24	Code quality	Automate your code review with style, quality,...	https://github.com/topics/code-quality
25	Code review	Ensure your code meets quality standards and s...	https://github.com/topics/code-review
26	Compiler	Compilers are software that translate higher-l...	https://github.com/topics/compiler
27	Continuous integration	Automatically build and test your code as you ...	https://github.com/topics/continuous-integration
28	COVID-19	The coronavirus disease 2019 (COVID-19) is an ...	https://github.com/topics/covid-19
29	C++	C++ is a general purpose and object-oriented p...	https://github.com/topics/cpp

```python
In [162... def scrape_topics_repos():
             print('Scraping list of topics')
             topics_df=scrape_topics()
             #create folder for python
             os.makedirs('data' ,exist_ok=True)
             for index,row in topics_df.iterrows():
                 print('Scraping top repositories for "{}"' .format(row['title']))
                 scrape_topic(row['url'],'data/{}.csv'.format(row['title']))
```

```python
In [163... topics_df
```

Out[163]:

	title	decription	url
0	3D	3D modeling is the process of virtually develo...	https://github.com/topics/3d
1	Ajax	Ajax is a technique for creating interactive w...	https://github.com/topics/ajax
2	Algorithm	Algorithms are self-contained sequences that c...	https://github.com/topics/algorithm
3	Amp	Amp is a non-blocking concurrency library for ...	https://github.com/topics/amphp

4	Android	Android is an operating system built by Google...	https://github.com/topics/android
5	Angular	Angular is an open source web application plat...	https://github.com/topics/angular
6	Ansible	Ansible is a simple and powerful automation en...	https://github.com/topics/ansible
7	API	An API (Application Programming Interface) is ...	https://github.com/topics/api
8	Arduino	Arduino is an open source hardware and softwar...	https://github.com/topics/arduino
9	ASP.NET	ASP.NET is a web framework for building modern...	https://github.com/topics/aspnet
10	Atom	Atom is a open source text editor built with w...	https://github.com/topics/atom
11	Awesome Lists	An awesome list is a list of awesome things cu...	https://github.com/topics/awesome
12	Amazon Web Services	Amazon Web Services provides on-demand cloud c...	https://github.com/topics/aws
13	Azure	Azure is a cloud computing service created by ...	https://github.com/topics/azure
14	Babel	Babel is a compiler for writing next generatio...	https://github.com/topics/babel
15	Bash	Bash is a shell and command language interpret...	https://github.com/topics/bash
16	Bitcoin	Bitcoin is a cryptocurrency developed by Satos...	https://github.com/topics/bitcoin
17	Bootstrap	Bootstrap is an HTML, CSS, and JavaScript fram...	https://github.com/topics/bootstrap
18	Bot	A bot is an application that runs automated ta...	https://github.com/topics/bot
19	C	C is a general purpose programming language th...	https://github.com/topics/c
20	Chrome	Chrome is a web browser from the tech company ...	https://github.com/topics/chrome
21	Chrome extension	Chrome extensions enable users to customize th...	https://github.com/topics/chrome-extension
22	Command line interface	A CLI, or command-line interface, is a console...	https://github.com/topics/cli
23	Clojure	Clojure is a dynamic, general-purpose programm...	https://github.com/topics/clojure
24	Code quality	Automate your code review with style, quality,...	https://github.com/topics/code-quality
25	Code review	Ensure your code meets quality standards and s...	https://github.com/topics/code-review
26	Compiler	Compilers are software that translate higher-l...	https://github.com/topics/compiler
27	Continuous integration	Automatically build and test your code as you ...	https://github.com/topics/continuous-integration
28	COVID-19	The coronavirus disease 2019 (COVID-19) is an ...	https://github.com/topics/covid-19
29	C++	C++ is a general purpose and object-oriented p...	https://github.com/topics/cpp

```
In [ ]:  scrape_topics_repos()
```

```
Scraping list of topics
Scraping top repositories for "3D"
Scraping top repositories for "Ajax"
Scraping top repositories for "Algorithm"
Scraping top repositories for "Amp"
Scraping top repositories for "Android"
Scraping top repositories for "Angular"
Scraping top repositories for "Ansible"
Scraping top repositories for "API"
Scraping top repositories for "Arduino"
Scraping top repositories for "ASP.NET"
Scraping top repositories for "Atom"
Scraping top repositories for "Awesome Lists"
Scraping top repositories for "Amazon Web Services"
Scraping top repositories for "Azure"
Scraping top repositories for "Babel"
Scraping top repositories for "Bash"
Scraping top repositories for "Bitcoin"
Scraping top repositories for "Bootstrap"
Scraping top repositories for "Bot"
Scraping top repositories for "C"
```

In [ ]: `doc`

In [ ]: `import jovian`

In [ ]: `jovian.commit()`

In [ ]:

In [ ]:

In [ ]:
```
### ERROR FACED DURING THE PROJECT

    #####  1. Attribute Error: 'None Type' object has no attribute 'findAll'.
    #####  2. IndentationError: unexpected indent
```

In [ ]:

In [ ]:

In [ ]: