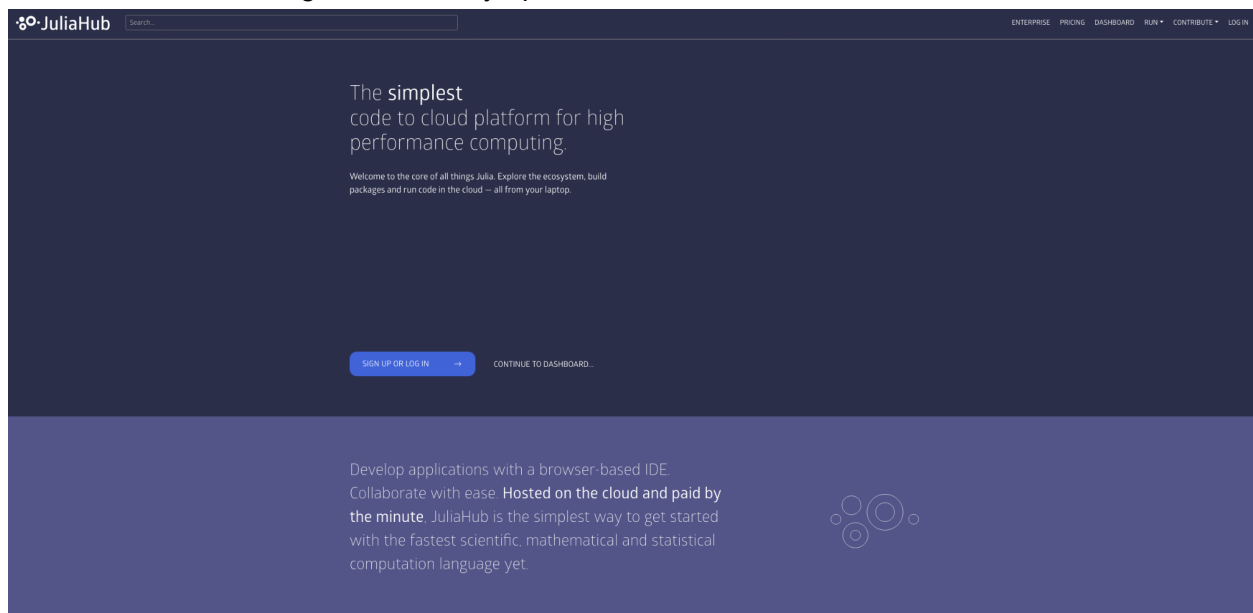


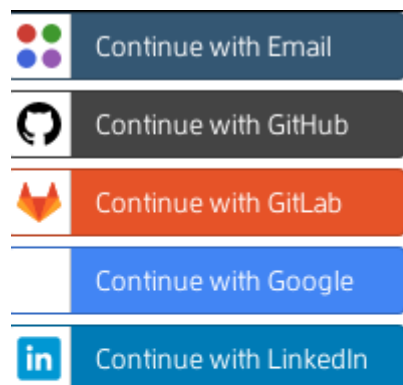
El uso de CUDA requiere de una GPU de Nvidia. Aunque no se posea una, es posible crear una cuenta en <https://juliahub.com/>. Esta es una iniciativa de Julia Computing, y permite rentar instancias en la nube de cómputo con CPUs y GPUs.

Al crear una cuenta, se ofrecen \$25.00 dólares de crédito gratuito, los cuales serán más que suficientes para el curso. Nota: Estos \$25 solo son válidos para la primera instancia generada. Es decir, que puede mantenerse hasta que cobre los \$25, pero una vez termina esa instancia, parece revocar los créditos gratuitos.

Para iniciar, se debe ingresar al sitio y oprimir el botón de SIGN UP OR LOG IN.



Esto llevará a una página en la que dan múltiples opciones para iniciar sesión. Seleccionar la que más convenga.



Después de iniciar, aceptar los términos de servicio.

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Effective Date: August 12, 2020

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Description of Services

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We may offer certain Services as beta services ("**Beta Services**") for the purpose of testing and evaluation. You agree that we have the sole authority and discretion to determine the period of time for testing and evaluation of Beta Services. We will be the sole judge of the success of such testing and the decision, if any, to offer the Beta Services as commercial services. You will be under no obligation to acquire a subscription to use any paid Services as a result of your subscription to any Beta Service. We reserve the right to fully or partially discontinue, at any time and from time to time, temporarily or permanently, any of the Beta Services with or without notice to you. You agree that Julia Computing will not be liable to you or to any third party for any harm related to, arising out of, or caused by the modification, suspension or discontinuance of any of the Beta Services for any reason.

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Log out

Accept

Esto llevará a una página como la siguiente:

JuliaHub is the entry point for all things Julia: explore the ecosystem, contribute packages, and easily run code in the cloud on big machines and on-demand clusters.

▶ Your Jobs


more...

🔗 Applications

more...

You don't have any running jobs.


Launch an application [here](#), use the [VSCode extension](#) to start a job, or [check out the documentation](#).



Julia IDE

The full power of VSCode in the cloud

🔗 Launch



Pluto

Run Pluto notebooks in the cloud

🔗 Launch

Se recomienda no continuar en este tutorial hasta el inicio de la sesión del viernes.

Para lanzar una instancia de Pluto en la nube, presionar el botón de Launch en la sección de Pluto. Ahora se mostrará un configurador de instancia para la sesión:

Start Application

Start a GPU job with 4 vCPUs and a K80 GPU .
Selecting a value marked with a * will change another option.

Limit by

time4 hr or \$5.60

Cost

\$1.40/hr

Runtime Parameters

Key	Value
-----	-------

+

Authentication *

☒ Enable authentication for your Pluto instance

Authorization *

Allow only my account

Choose who can access your Pluto instance

Start

Existen varias opciones para la renta de instancias. Para fines del curso, seleccionaremos GPU con una K80, ya que es la opción más económica. En “Limit by” se recomienda poner 4 horas ya que es la duración de la sesión.

Una vez configurado, presionar Start.

Esto llevará de regreso a la página principal. Ahora Pluto tendrá un botón de Connect que no se puede presionar hasta que la instancia se ha levantado.

Your Jobs


more...

Running

Pluto (Submitted) [Link](#) [Logs](#)

Applications


more...



Julia IDE

The full power of VSCode in the cloud

Launch



Pluto

Run Pluto notebooks in the cloud

Connect

Tardará entre 5 y 10 minutos en asignar la instancia. Posteriormente se podrá presionar el botón de conectar para ingresar a una versión de Pluto en la nube que no consume recursos en la computadora del usuario.

welcome to Pluto.jl 

New session:

Create a [new notebook](#)

Open from URL:

Open

En el URL ingresar la liga al notebook de Pluto,
<https://github.com/oaefbsc/Julia-IIMAS-v1.0/blob/main/src/CUDA/CUDA.jl> y presionar Open.

Tardará un minuto en lanzar el Notebook:

Pluto.jl 

Default  CUDA.jl



Uso de CUDA en Julia

El uso de CUDA en Julia se presenta mediante tres formas:

- Paralelismo implícito por drop-ins.
- Paralelismo explícito al escribir kernels.
- Interfaces con las bibliotecas y el API por medio de wrappers.

```
• using PlutoUI, CUDA, BenchmarkTools

• PlutoUI.TableOfContents(aside=true, title="CUDA")

• with_terminal(CUDA.versioninfo)
```

Posteriormente se descargarán las dependencias y se ejecutará el código. Esto tardará aproximadamente 10 minutos.