



# Laboratorio 7:

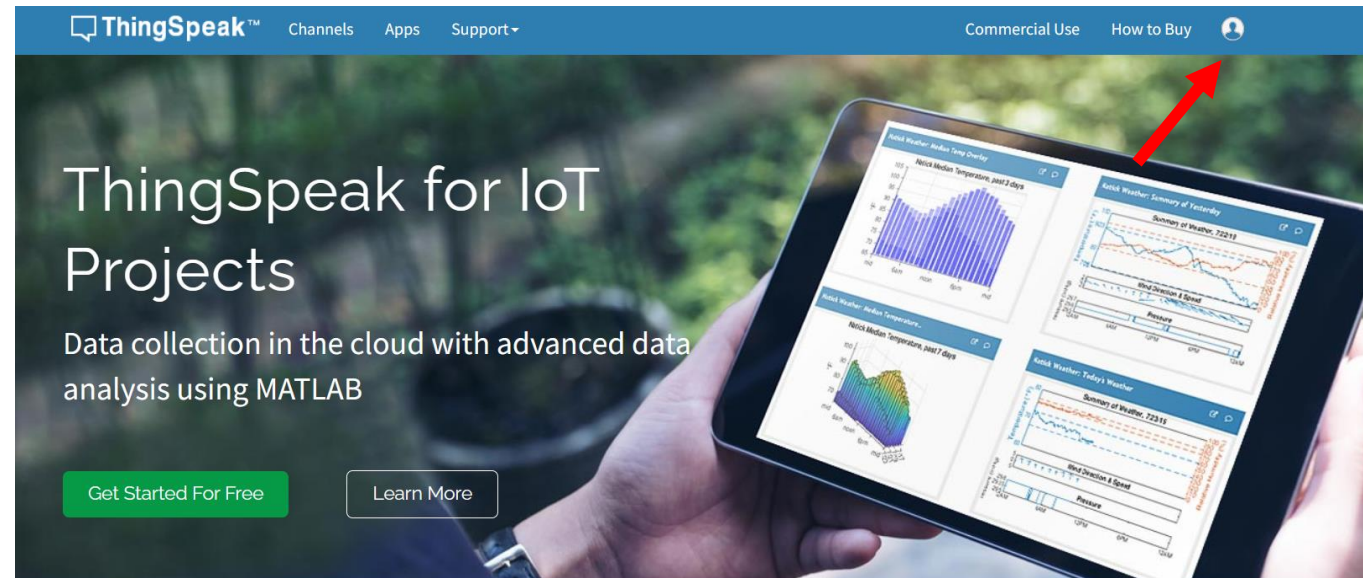
## ThinkgSpeak y Node-Red



# Cuenta de ThingSpeak

- Thingspeak es una plataforma IoT para agregar, visualizar y analizar informacion en la nube.

1.- Acceder a: [IoT Analytics - ThingSpeak Internet of Things](#)  
y hacer clic en "Sign In".





# Cuenta de ThingSpeak

2.- Hacer clic en "Create one!".



To use ThingSpeak, you must sign in with your existing MathWorks account or create a new one.

Non-commercial users may use ThingSpeak for free. Free accounts offer limits on certain functionality. Commercial users are eligible for a time-limited free evaluation. To get full access to the MATLAB analysis features on ThingSpeak, log in to ThingSpeak using the email address associated with your university or organization.

To send data faster to ThingSpeak or to send more data from more devices, consider the [paid license options](#) for commercial, academic, home and student usage.

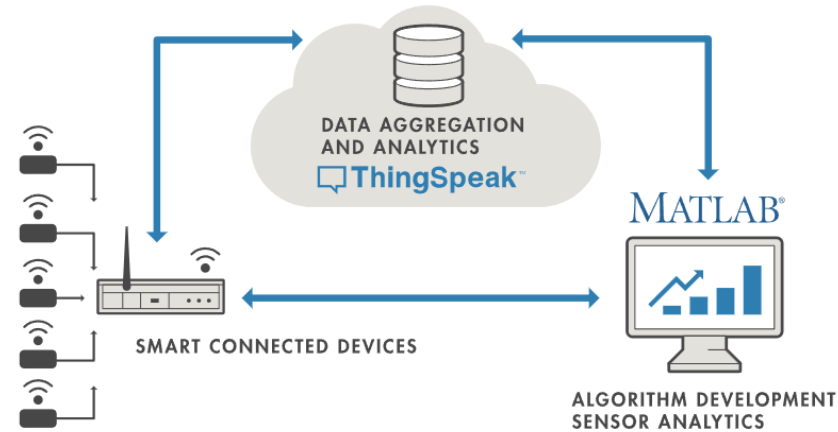


Email

No account? [Create one!](#)

By signing in, you agree to our [privacy policy](#).

Next



# Cuenta de ThingSpeak



3.- Llenar la información requerida y hacer clic en "Continue".

ThingSpeak™ Channels Apps Support▼ Commercial Use How to Buy

Create MathWorks Account

Email Address

Missing required information

To access your organization's MATLAB license, use your school or work email.

Location

Ecuador ▼

First Name

Last Name

Continue

Cancel

# Cuenta de ThingSpeak



4.- Un email de confirmación debería ser enviado a su correo electrónico para confirmar la cuenta, acceder al enlace y hacer clic en "Continue"

## Verify Your MathWorks Account

To finish creating your account, complete the following steps:

1. Go to your inbox for **s.trujillo@aerospacehv.com**.
2. Click the link in the email we sent you.
3. Click **Continue**.

## Didn't receive the email?

- Check your spam folder.
- [Send me the email again.](#)
- If you still have not received the email, Contact [Customer Support](#)

Continue

Cancel



MathWorks®

## MathWorks Account



Your profile was verified



SMART CONNECTED DEVICES



ALGORITHM DEVELOPMENT  
SENSOR ANALYTICS



# Cuenta de ThingSpeak

5.- Insertar una contraseña adecuada para su cuenta y hacer clic en "I accept the Online Services Agreement" y luego hacer clic en "Continue".



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## Finish your Profile

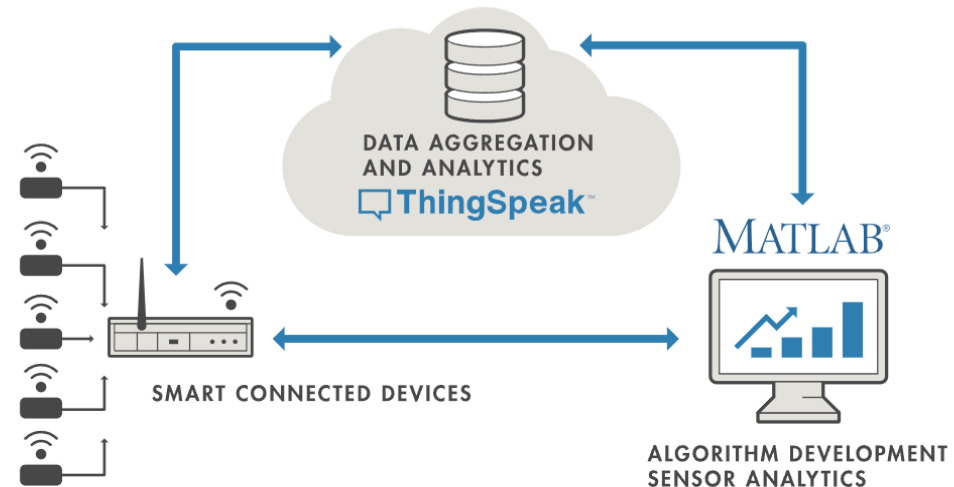
Password

☐ I accept the [Online Services Agreement](#)

See our [privacy policy](#) for details.

Continue


Cancel



# Cuenta de ThingSpeak



6.- Una vez su cuenta este creada hacer clic en "Ok" para tener acceso.

 Channels ▾ Apps ▾ Devices ▾ Support ▾ Commercial Use How to Buy **ST**

Signed in successfully. X

## Sign-up successful

Congratulations, you have successfully linked your MathWorks account to ThingSpeak. Use the following email ID and its associated MathWorks account password on all subsequent logins to ThingSpeak.

Email ID: **s.trujillo@aerospacehv.com**

Welcome to ThingSpeak!

OK



# Cuenta de ThingSpeak

6.- Antes de comenzar ThingSpeak requiere llenar una pequeña encuesta la cual se llena y luego se hace clic en "Ok".

The image shows a 'ThingSpeak Usage Intent' survey form. The background is a blurred screenshot of the ThingSpeak website, showing the 'My Channels' section with a 'New Channel' button and a list of channels. The survey form is titled 'ThingSpeak Usage Intent' and contains the following sections:

- How are you planning to use ThingSpeak?**
  - ☐ Commercial work (including research)
  - ☐ Government work (including research)
  - ☐ Personal, non-commercial projects
  - ☒ Student use, Teaching, or Research in academia
- What is the name of your University?\***
  - Enter university name here
- What best describes your current role?\***
  - ☒ Student
  - ☐ Professor
  - ☐ Researcher
- What is the name of your Course or Project?\***
  - Enter course or lab name here
- Tell us something about your project (optional)**
  - Text input field

A red arrow points to the 'OK' button at the bottom right of the form.





# ThingSpeak: Canales

La Plataforma usa canales para recolectar información recibida de dispositivos IoT.

Cada canal puede tener hasta 8 campos.

ThingSpeak™

Channels ▾

Apps ▾

Devices ▾

Support ▾

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ST

My Channels

New Channel

Search by tag

New Channel

Name

Description

Field 1

Field Label 1

☒

Field 2

☐

Field 3

☐

Field 4

☐

Field 5

☐

Field 6

☐

Field 7

☐

Field 8

☐

Help

Channels store all the data that a ThingSpeak application collects. Each channel includes eight fields that can hold any type of data, plus three fields for location data and one for status data. Once you collect data in a channel, you can use ThingSpeak apps to analyze and visualize it.


Channel Settings

- **Percentage complete:** Calculated based on data entered into the various fields of a channel. Enter the name, description, location, URL, video, and tags to complete your channel.
- **Channel Name:** Enter a unique name for the ThingSpeak channel.
- **Description:** Enter a description of the ThingSpeak channel.
- **Field#:** Check the box to enable the field, and enter a field name. Each ThingSpeak channel can have up to 8 fields.
- **Metadata:** Enter information about channel data, including JSON, XML, or CSV data.
- **Tags:** Enter keywords that identify the channel. Separate tags with commas.
- **Link to External Site:** If you have a website that contains information about your ThingSpeak channel, specify the URL.
- **Show Channel Location:**
  - **Latitude:** Specify the latitude position in decimal degrees. For example, the latitude of the city of London is 51.5072.
  - **Longitude:** Specify the longitude position in decimal degrees. For example, the



# ThingSpeak: Canal

Una vez creado el canal existen opciones para configurar el canal y la visualización de los campos configurados.

 **ThingSpeak™**

Channels ▾ Apps ▾ Devices ▾ Support ▾

Commercial Use How to Buy **ST**

## IoT\_Demo

Channel ID: **2360507**

Demo de IoT

Author: mwa0000031873266

Access: Private

Private View


Public View


Channel Settings


Sharing

API Keys

Data Import / Export

 Add Visualizations

 Add Widgets

 Export recent data

MATLAB Analysis

MATLAB Visualization





### Channel Stats

Created: 9 days ago





Last entry: 8 days ago

Entries: 533

Field 1 Chart



Field 2 Chart



IoT\_Demo

IoT\_Demo

# ThingSpeak: Comunicación con HTTPS



Haciendo clic en "API Keys" se puede acceder a las herramientas necesarias para transmitir información a ThingSpeak.

Llaves de seguridad para escribir o leer la información en ThingSpeak.

Write API Key

Key: F0H2JNOXBOMLSYBE

Generate New Write API Key

Read API Keys

Key: PFTEMAHFVPMWY5L

Note

Save Note Delete API Key

Add New Read API Key

Help

API keys enable you to write data to a channel or read data from a private channel. API keys are auto-generated when you create a new channel.

API Keys Settings

- Write API Key:** Use this key to write data to a channel. If you feel your key has been compromised, click **Generate New Write API Key**.
- Read API Keys:** Use this key to allow other people to view your private channel feeds and charts. Click **Generate New Read API Key** to generate an additional read key for the channel.
- Note:** Use this field to enter information about channel read keys. For example, add notes to keep track of users with access to your channel.

API Requests

Write a Channel Feed

```
GET https://api.thingspeak.com/update?api_key=F0H2JNOXBOMLSYBE&field1=0
```

Read a Channel Feed

```
GET https://api.thingspeak.com/channels/2360507/feeds.json?api_key=F0H2JNOXBOMLSYBE
```

Read a Channel Field

```
GET https://api.thingspeak.com/channels/2360507/fields/1.json?api_key=F0H2JNOXBOMLSYBE
```

Read Channel Status Updates

```
GET https://api.thingspeak.com/channels/2360507/status.json?api_key=F0H2JNOXBOMLSYBE
```

Learn More

GET

[https://api.thingspeak.com/update?api\\_key=F0H2JNOXBOMLSYBE&field1=0](https://api.thingspeak.com/update?api_key=F0H2JNOXBOMLSYBE&field1=0)

Comandos para interactuar con el canal.