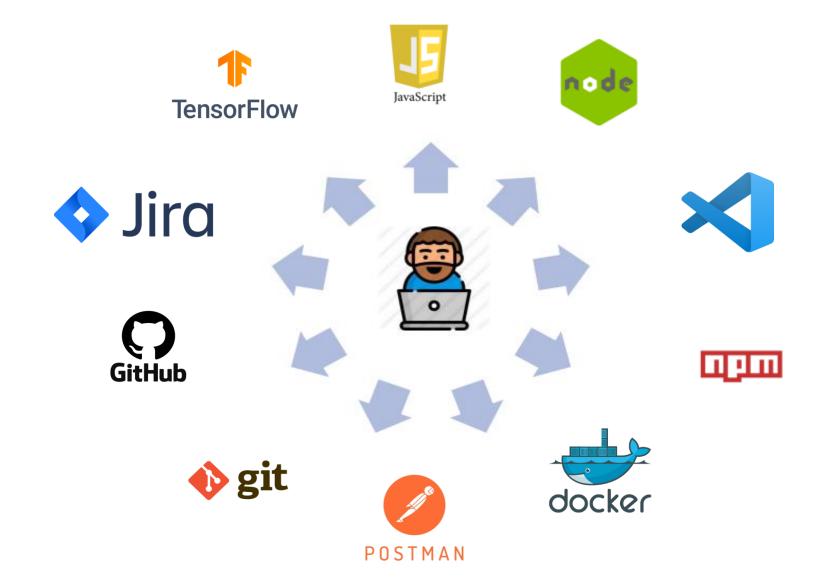
DEMO PROJECT-LATAM03 PROG 102

- Team members:
  - David Parra
- Dilan Ojeda
- Florencia Padilla
- Steven Ospina

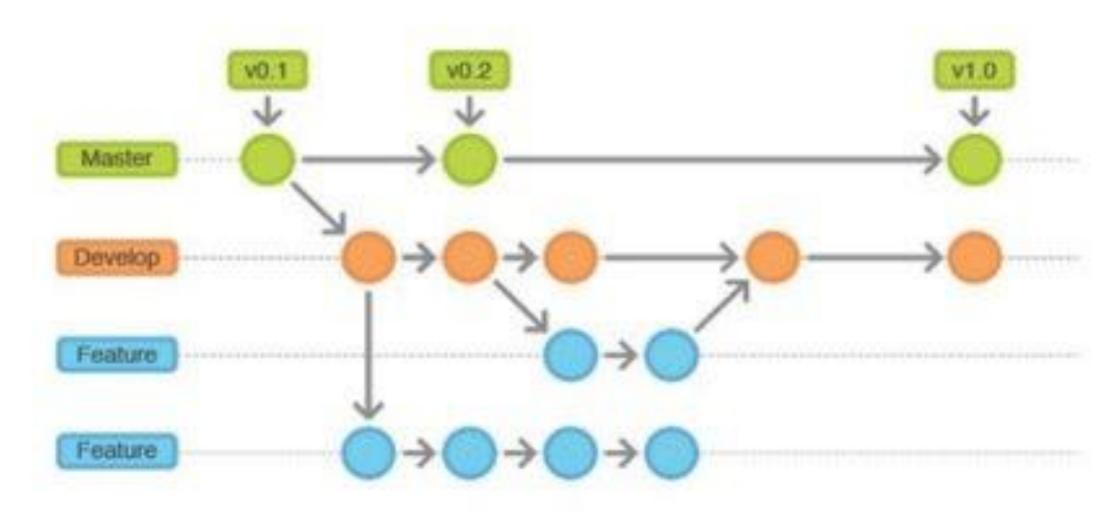
# **TOOLS USED**





### Version Control: Development Branches





D origin/Machine-learning-multiples-images

git

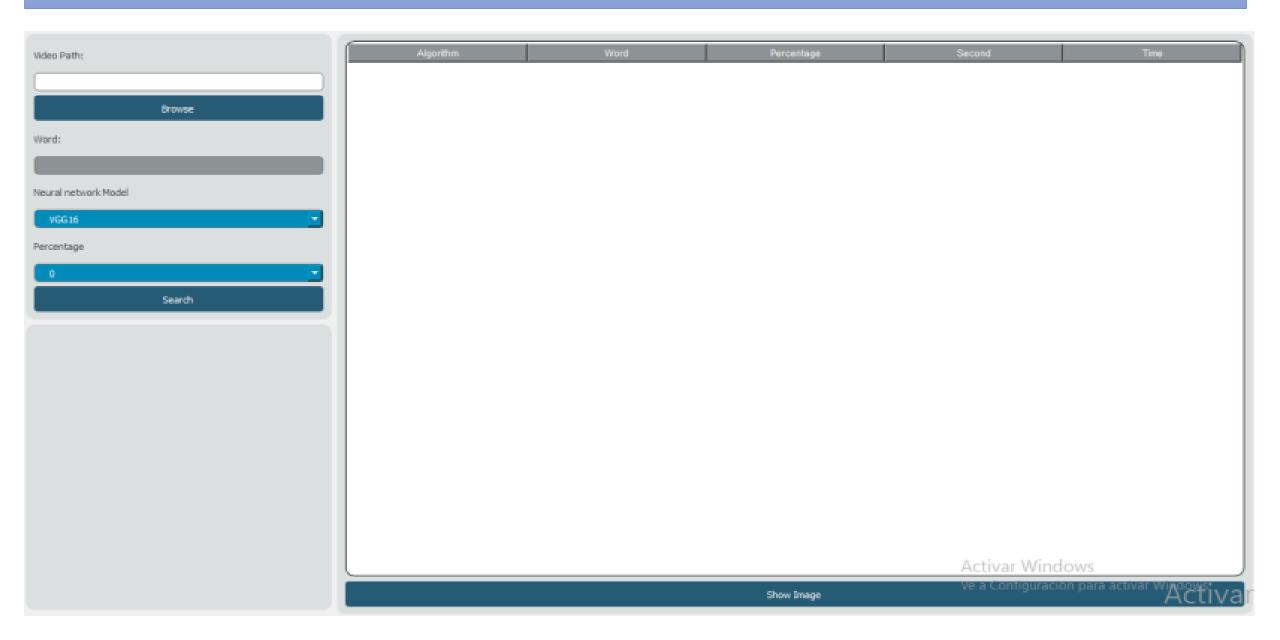
origin/FEATURE-CLASS-CONVERTER

origin/yolo-model

origin/CONVERTER-SERVICE

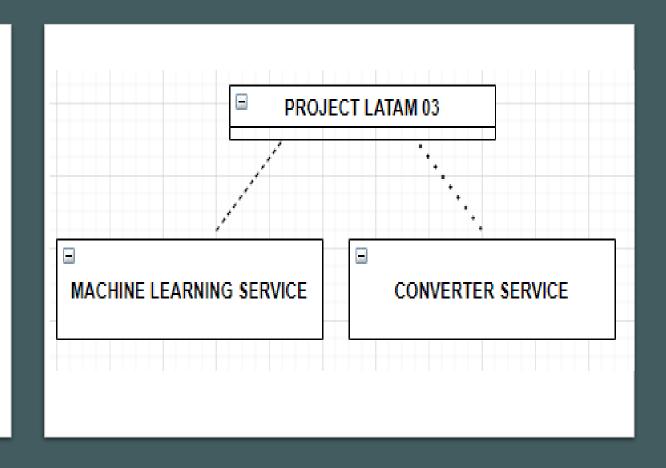
converter method integrated

### PROJECT LATAM-03: OBJECTIVE

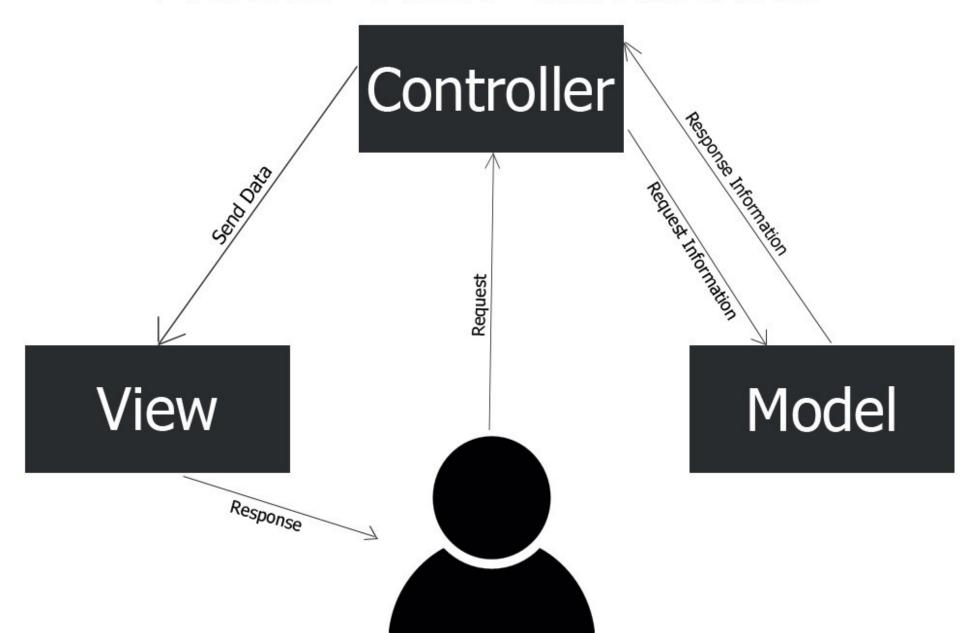


# MICROSERVICES ARCHITECTURE

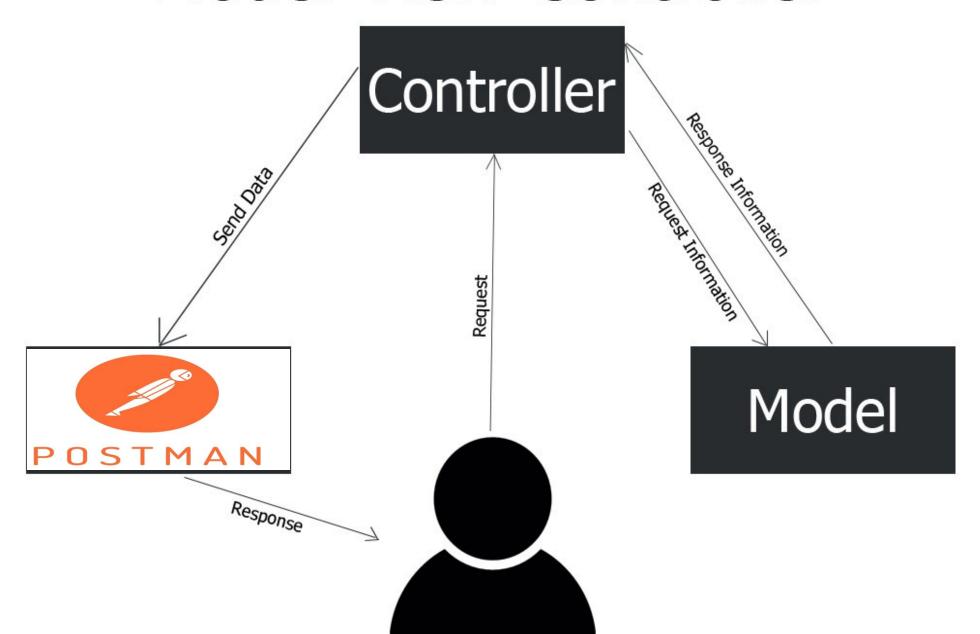




# Model-View-Controller



# Model-View-Controller



### **ENDPOINT**

```
CONVERTER-SERVICE > .env

1  PORT=9090
2  URL='/api/v1/'
3  URLBASE = 'http://localhost:'

POST 

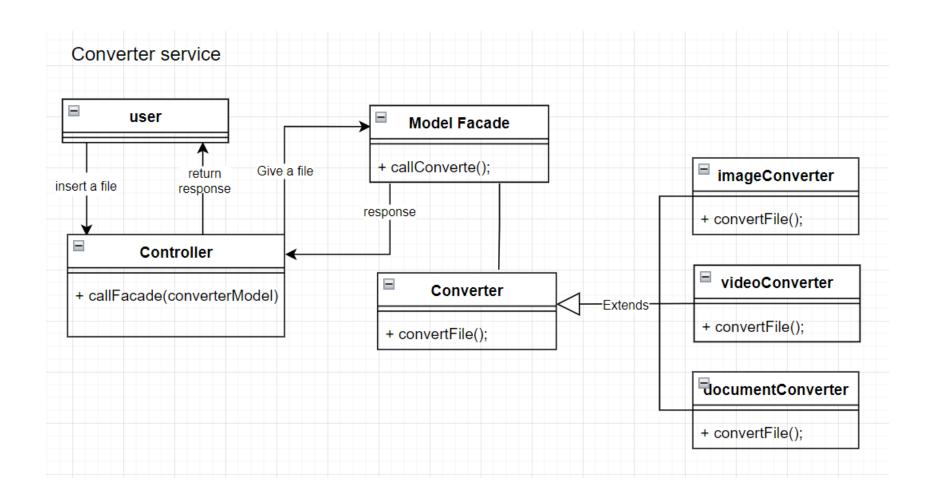
http://localhost:9090/api/v1/convert-video
```

POST v http://localhost:3000/api/v1/recognize-objects

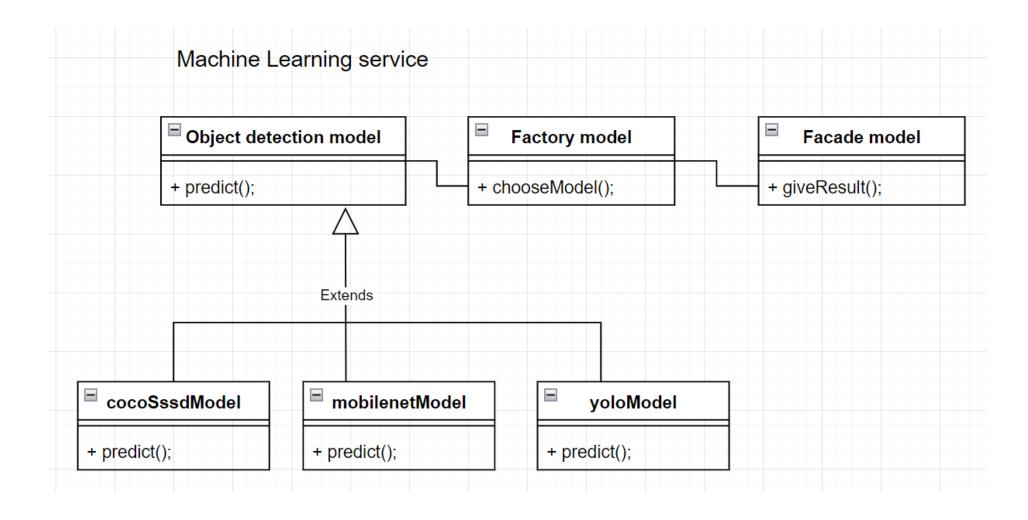
MACHINE-LEARNING-SERVICE > src > .env 1 PORT=3000

SERVER\_URL=http://localhost:3000/api/v1

## Class Diagram

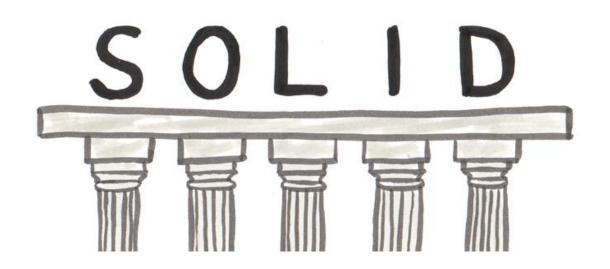


# Class Diagram



SOLID Principles is a coding standard that developers should implement to avoid a bad software design.

- More Understandable.
- More Flexible.
- More Maintainable.



S

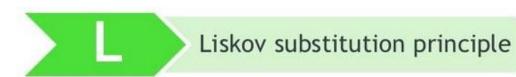
# Single responsibility principle

Every class should have only one responsibility.

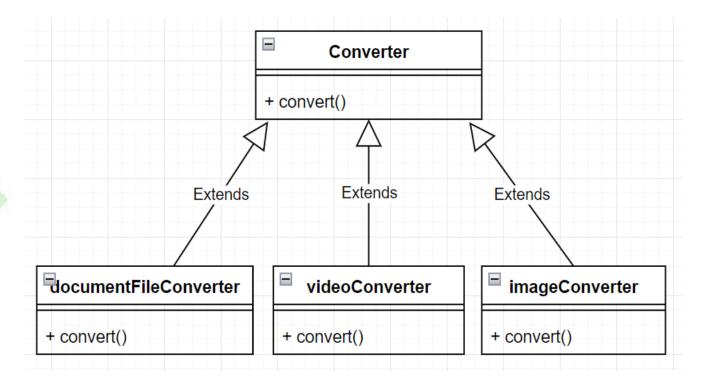
```
// Builds an image that is constructed from two
class ImageCompositer {
 constructor(backgroundImage, images, savePath, format) {
   this._backgroundImage = backgroundImage;
   this._images = images;
   this._savePath = savePath;
   this._format = format;
 async composite() {
   try {
     return sharp(this._backgroundImage)
       .composite(this. images)
       .toFormat(this._format)
       .toFile(this. savePath + '.' + this. format)
       .then((image) => {
         const { format, width, height, size } = image;
         return { response: true, image: { format, width, height, size } };
       });
   } catch (error) {
     throw new ConverterException(
        'There was an error converting the file',
        'LATAM03'
module.exports = ImageCompositer;
```

### Open/closed principle

Open for extension but closed for modification.



Subclasses should be able to replace their parent class.



# Interface segregation principle

Many specific interfaces are better than one general interface.

Dependency inversion principle

High level class should not depend on concretions class, instead they have to depend on abstractions.

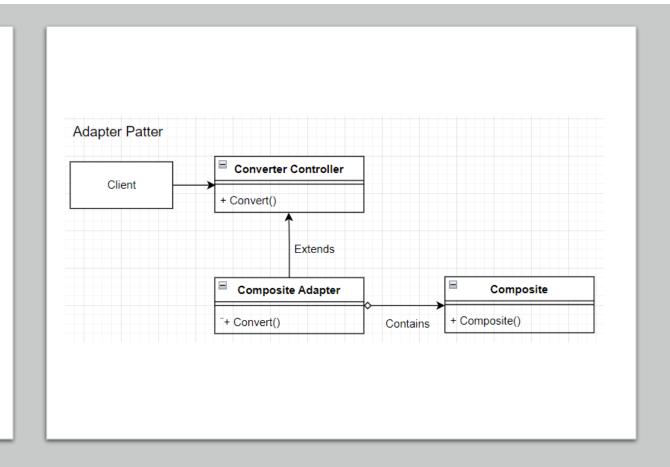


### Desing Patterns

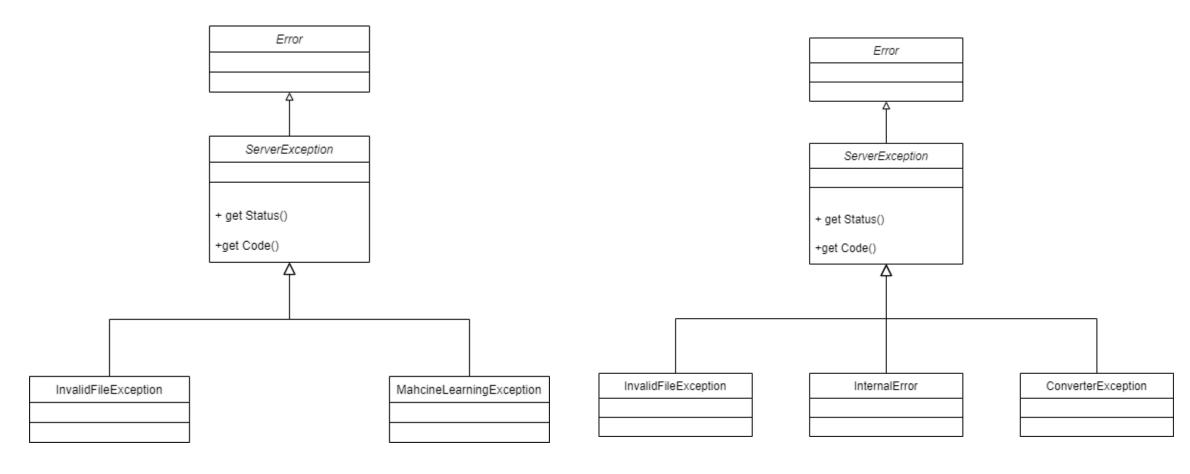
• Is a solution to a common problem in software design.

### We implemented:

- Factory patter
- Façade patter
- Adapter patter



# Class Diagram Exception Handling



Machine Learning Service

Converter-Service

# Unit Test

```
File
                                % Stmts |
                                         % Branch
                                                    % Funcs | % Lines
                                                                        Uncovered Line #s
All files
                                                       87.5
                                  90.76
                                                60
                                                                90.76
Exceptions
                                  85.71
                                               100
                                                         60
                                                                85.71
 invalidFile.exception.js
                                    100
                                               100
                                                         100
                                                                  100
 machineLearning.exception.js
                                    100
                                               100
                                                         100
                                                                  100
 server.exception.js
                                                      33.33
                                                                66.66
                                                                        23-28
                                  66.66
                                               100
helpers
                                   91.3
                                             41.66
                                                         100
                                                                 91.3
 decompress.helper.js
                                    100
                                               100
                                                         100
                                                                  100
 filterResults.helper.js
                                             41.66
                                                         100
                                                                        30-35
                                  83.33
                                                                83.33
                                  88.23
                                              87.5
                                                      66.66
                                                                88.23
 mode1
 factory.model.js
                                   190
                                              2.90
                                                         100
                                                                  100
 objectDetection.model.js
                                                         50
                                                                        18-24
                                    -58
                                               58
                                                                   50
 model/models
                                                                 92.1
                                   92.1
                                               100
                                                         100
 cocoSsd.model.js
                                                                       39-40,45-50
                                   82.6
                                               100
                                                         100
                                                                 82.6
 mobilenet.model.js
                                                                  100
                                    100
                                               100
                                                         100
 yolo.model.js
                                   93.1
                                               100
                                                         100
                                                                 93.1
                                                                        55-60
Test Suites: 6 passed, 6 total
            18 passed, 18 total
Tests:
            0 total
Snapshots:
Time:
            46.578 s
Ran all test suites.
```

ile	% Stmts	% Branch	% Funcs	% Lines	Uncovered Line #s
All files	87.2	50	82.6	87.2	 
Exceptions	83.33	100	60	83.33	İ
converter.exception.js	100	100	100	100	ĺ
invalidFile.exception.js	100	100	100	100	ĺ
server.exception.js	66.66	100	33.33	66.66	24-29
helpers	91.66	75	100	91.66	
fileChecker.helper.js	87.5	75	100	87.5	23
hashGenerator.helper.js	100	100	100	100	
models	87.09	25	87.5	87.09	
<pre>ImageCompositer.model.js</pre>	91.66	100	100	91.66	38
converter.model.js	50	50	50	50	17-23
documentFileConverter.model.js	71.42	0	66.66	71.42	31-38
imageConverter.model.js	94.11	100	100	94.11	55
videoConverter.model.js	100	100	100	100	

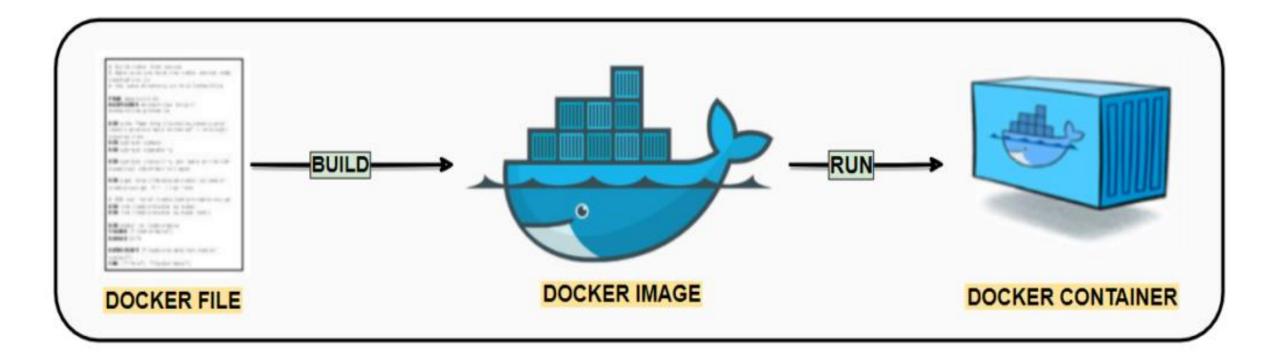
Test Suites: 6 passed, 6 total
Tests: 28 passed, 28 total

**Snapshots:** 0 total **Time:** 8.308 s Ran all test suites.

# KNOW ISSUES... Y BACKLOG TASKS.... (JIRA)

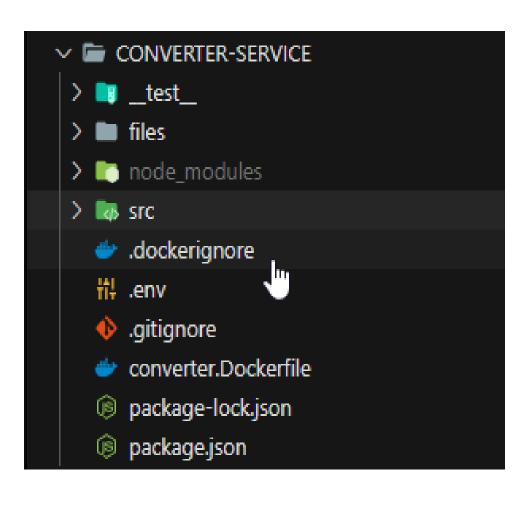
Tipo	Clave	Resumen	Persona asignada	Informador	Pr	Estado *
ш	PP-8	invalid file error when the app is trying to decompress a zip file.	Sin asignar	Maria Florencia P	_	IAKŁA
	PP-7	"Machine Learning Service" accepts invalid percentage parameter	MP Maria Florencia P	MP Maria Florencia P	=	TAREA
	PP-6	Error 400 occurs in "Machine Learning Service" when a jpg image is sent as parameter	Maria Florencia P	Maria Florencia P	=	FINALI
	PP-5	Image Converter stops working when attaching an invalid file which extension was manually changed to be valid	MP Maria Florencia P	luis parra	^	TAREA
	PP-4	Converter video doesn't prevent uploading an invalid file when a 400 error occurs	Sin asignar	luis parra	*	TAREA

### **DOCKER**

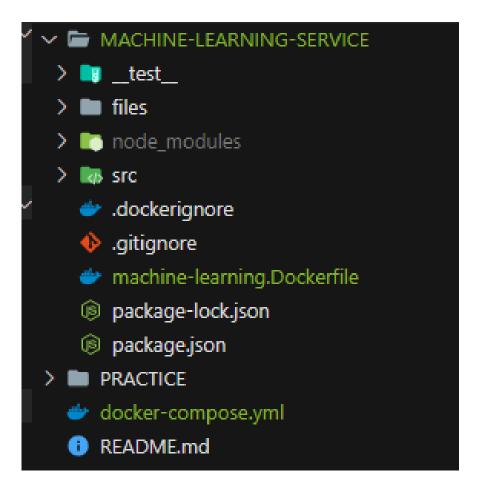


### Docker

#### **Converter Service**



### Maching Learning Service



#### Dockerfiles

#### Converter Service Dockerfile

### CONVERTER-SERVICE > 🐡 converter.Dockerfile > ... FROM node:latest WORKDIR /app COPY package\*.json ./ Click to add t RUN apt update && apt install ffmpeg -y RUN npm install COPY . . EXPOSE 5000 CMD ["npm", "start"]

### Maching Learning Dockerfile

```
FROM node:latest
ENV PORT=3000
ENV SERVER_URL=http://localhost:3000/api/v1
RUN apt-get update || : && apt-get install -y python build-essential
WORKDIR /app
COPY package*.json ./
RUN npm install
EXPOSE 3000
CMD [ "npm", "start"]
```

# Docker Compose

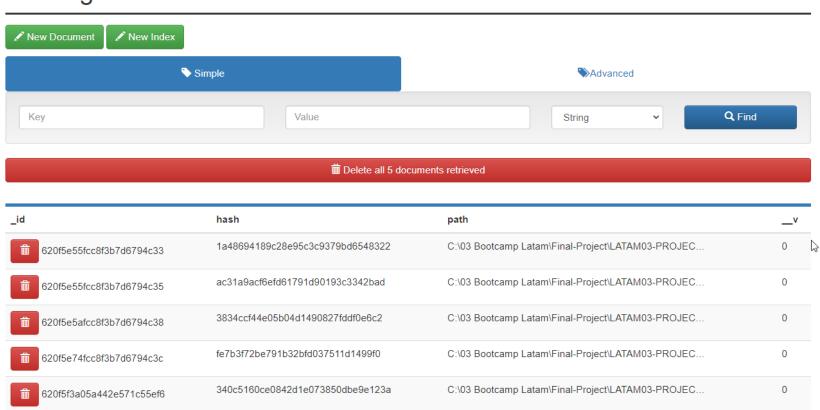
```
services:
   container name: machine-learning-service
   build:
     context: ./MACHINE-LEARNING-SERVICE
     dockerfile: machine-learning.Dockerfile
   restart: always
    - 4000:3000
   environment:
     PORT: 3000
     SERVER URL: http://localhost:3000/api/v1
    image: mongo
    container name: mongo
   restart: always
    ports:
    - "27017:27017"
     - ./data:/data/db
   networks:
      - mongo-network
```

```
mongo-express:
 image: mongo-express:0.54
  container_name: mongo-express
  restart: always
    - 8081:8081
    - mongo
  environment:
   ME_CONFIG_BASICAUTH_USERNAME: root
   ME_CONFIG_BASICAUTH_PASSWORD: root
   ME CONFIG MONGODB PORT: 27017
   ME CONFIG MONGODB ADMINUSERNAME: root
    ME CONFIG MONGODB ADMINPASSWORD: root
 links:
    - mongo
 networks:
    - mongo-network
```



Mongo Express Database: upload → ➤ Collection: files →

#### Viewing Collection: files



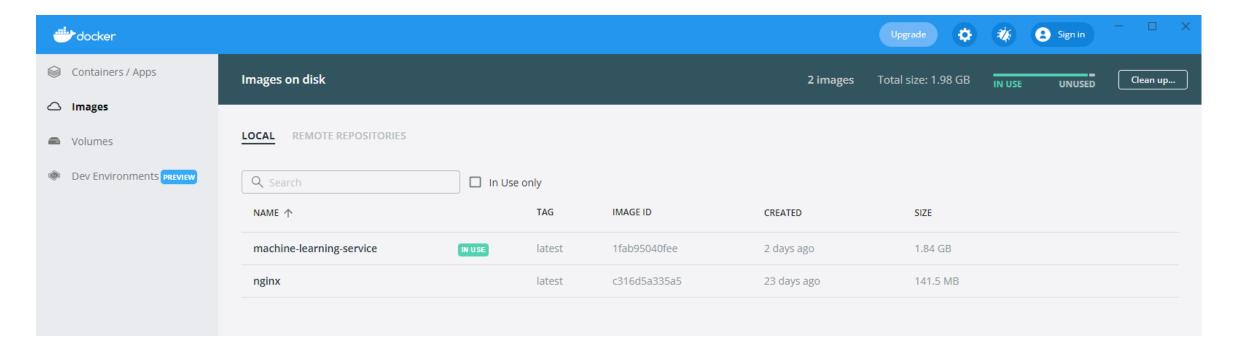
# Typical Docker commands

#### Docker-compose:

- docker-compose up
- docker-compose start
- docker-compose ps

#### Docker:

- docker build -t machine-learning-service .
- docker run -it -p 4000:3000 machine-learning-service
- docker images



# **DEMO**