

What is GitHub?

...

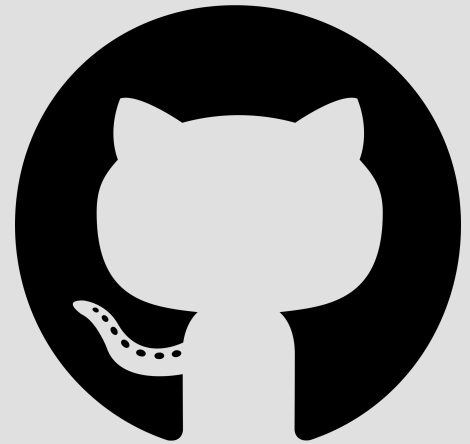
For AAE FYP students



Today's Rundown

1. General Introduction about GitHub
2. Introduction of GitHub's working principle
3. Setup
4. Lab session
5. Follow up session

What is GitHub?



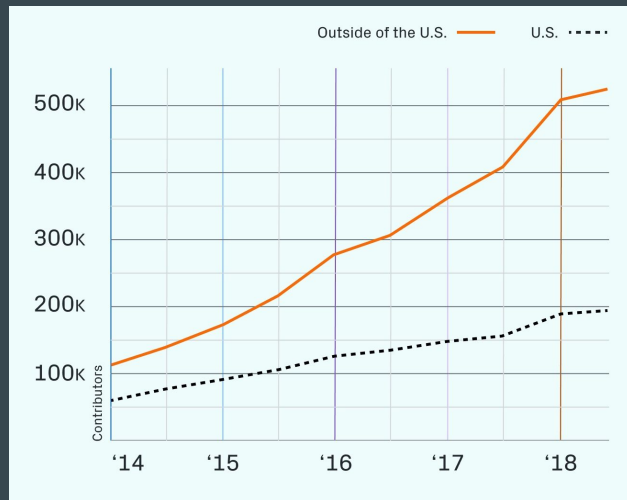
What is Github?



- A social network and platform for software developers
 - Over 65 million users
 - A place to Share, Communicate, Collaborate with others, especially programmers
-

What's on GitHub

- Over 100 million live Projects
- New projects increasing over the years
- Showing the trend of using GitHub for Software development




Variety of GitHub

- Countless topics and projects available for the public
- Encompassing most popular topics nowadays



BIG GitHub Pages

**Tesla, Inc.**
<https://www.tesla.com/> Verified

Repositories Packages People Projects

Find a repository...

Type Language Sort

kafka-helmman
kafka-helmman is a repository of tools that focus on automating a Kafka deployment
Java MIT 18 56 2 (1 issue needs help) 11 Updated 11 hours ago

perf_data_converter
forked from google/perf_data_converter
Tool to convert Linux perf files to the profile.proto format used by gperf
C++ BSD-3-Clause 10 1 0 Updated 12 days ago

react-native-camera-kit
A high performance, easy to use iOS solid camera library for React Native apps.
Objective-C MIT 340 1,444 12 16 Updated 13 days ago


fixed-containers
C++ Read Containers
C++ MIT 3 0 11 Updated on Jul 1

mongo-go-driver
Forked from mongomongo-go-driver
The Go driver for MongoDB
Go Apache-2.0 670 52 0 11 Updated on Jun 29

coreboot
Coreboot sources
GPL-2.0 12 52 0 11 Updated on Jun 15

linux
Linux sources
 149 507 0 11 Updated on Jun 15

ansible-culler

**Microsoft**
Open source projects and samples from Microsoft
Redmond, WA <https://opensource.microsoft.com> [@OpenSourceMicrosoft](#) opensource@microsoft.com Verified

Repositories Packages People Projects Sponsoring

Find a repository...

Type Language Sort

Graphormer
This is the official implementation for "Do Transformers Really Perform Bad for Graph Representation?"
graph transformer
Python MIT 50 399 1 2 Updated 3 minutes ago

calculator
Windows Calculator: A simple yet powerful calculator that ships with Windows
windows xaml csharp cpp uwp windows-10
C++ MIT 1,969 22,426 238 (5 issues need help) 13 Updated 3 minutes ago

v8-ksi
React Native V8 JSI adapter
C++ 16 25 2 11 Updated 4 minutes ago

ts-gyb
Generating native code interfaces from TypeScript
kotlin swift typescript webview code-generation javascriptcore
hybrid-app
TypeScript MIT 1 19 11 11 Updated 3 minutes ago

onnxruntime
ONNX Runtime: cross-platform, high performance ML inference and training accelerator
machine-learning deep-learning tensorflow scikit-learn pytorch
neural-networks hardware-acceleration
C++ MIT 1,177 4,967 395 (1 issue needs help) 115 Updated 7 minutes ago

responsible-ai-widgets
This project provides responsible AI user interfaces for Fairlearn, interpret, community, and Error Analysis, as well as foundational building blocks that they

Top languages
C# TypeScript Python JavaScript C++


Most used topics
azure microsoft python machine-learning typescript

People
4.5k >

Sponsoring
4

Report abuse

Github Sponsor
Developer Program Member
Report abuse

**Google**
Google Open Source
<https://opensource.google/> [@GoogleOSS](#) opensource@google.com Verified

Repositories Packages People Projects

Find a repository...

Type Language Sort

closure-compiler-npm
Package for managing and documenting closure-compiler for use via npm
JavaScript Apache-2.0 66 303 2 (1 issue needs help) 11 Updated 3 minutes ago

it-cert-automation-practice
Google IT Automation with Python Professional Certificate - Practice files
Python Apache-2.0 19,346 381 36 5,000+ Updated 4 minutes ago

CFU-Playground
Want a faster ML processor? Do it yourself -- A framework for playing with custom opcodes to accelerate TensorFlow Lite for Microcontrollers (TFLM).
tensorflow tfLite tflm
C++ Apache-2.0 23 67 30 (1 issue needs help) 15 Updated 7 minutes ago

pytype
A static type analyzer for Python code
python typechecker types static-code-analysis linter static-analysis
typing
Python 200 3,367 93 (3 issues need help) 11 Updated 17 minutes ago

trax
Trax — Deep Learning with Clear Code and Speed
machine-learning reinforcement-learning deep-learning numpy
deep-reinforcement-learning transformer jax
Python Apache-2.0 627 6,355 72 (1 issue needs help) 113 Updated 17 minutes ago

pigweed
microcontroller embedded cpp embedded-systems mcu
C++ Apache-2.0 7 31 0 11 Updated 18 minutes ago


Top languages
Python C++ Go JavaScript

Most used topics
android security python java go

People
1.2k >

Developer Program Member
Report abuse

BIG GitHub Pages

**Boeing**

[Overview](#) [Repositories 3](#) [Packages](#) [People](#) [Projects](#)

Popular repositories

modular_navigation
C++ 6 5


modular_cartographer
C++ 5 5

cartographer
C++ 5 3

math6d
Python 2 1

image_tran

C++

**Airbus Group**
We design, manufacture and deliver industry-leading commercial aircraft, helicopters, military transports, satellites and launch vehicles
Toulouse <https://www.airbus.com> [Verified](#)

[Overview](#) [Repositories 2](#) [Packages](#) [People](#) [Projects](#)

Popular repositories

scikit-decide
AI framework for Reinforcement Learning, Automated Planning and Scheduling
Python 14 7 10

ED247_LIBRARY
Example of ED-247 standard implementation
C++ 13 7 7

Repositories


Find a repository...

Type Language Sort

ED247_LIBRARY
Example of ED-247 standard implementation
C++ 13 7 7 3 1

scikit-decide
AI framework for Reinforcement Learning, Automated Planning and Scheduling
Python 14 7 10 2 1 0

[View all repositories](#)

**NASA**
Read about NASA's Open Data initiative here: <https://www.nasa.gov/open/> & Members Find Instructions here: <http://nasa.github.io/>
United States of America <https://github.com/nasa/nasa.github.io/> nasa-data@lists.arc.nasa.gov

[Repositories 359](#) [Packages](#) [People 42](#) [Projects 1](#)

Pinned repositories

nasa.github.io
<https://github.com/nasa/nasa.github.io/blob/master/docs/INSTRUCTIONS.md>
HTML 238 52

Find a repository...

Type Language Sort

fprime
F - A flight software and embedded systems framework
[raspberrypi](#) [components](#) [real-time](#) [framework](#) [embedded](#) [cpp](#)
[nasa](#)
C++ Apache-2.0 961 8,370 68 (1 issue needs help) 7 Updated 34 minutes ago

cumulus-orca
Python 7 13 0 1 Updated 1 hour ago

ow_autonomy
C++ 4 13 0 0 Updated 2 hours ago

LHASA
Landslide Hazard Analysis for Situational Awareness
R 7 8 0 0 Updated 2 hours ago

earthdata-search
Earthdata Search is a web application developed by NASA EOSDIS to enable data discovery, search, comparison, visualization, and access across EOSDIS' Earth Science data holdings.
[data-discovery](#) [hacktoberfest](#) [eosdis](#) [earthdata-search](#)
JavaScript 202 618 14 1 Updated 3 hours ago

Top languages

C++ Python

Report abuse

Top languages


Python C C++ JavaScript

Jupyter Notebook

Most used topics

[nasa](#) [cumulus](#) [nasa-cumulus](#)
[eosdis](#) [satellite](#)

People 42 >

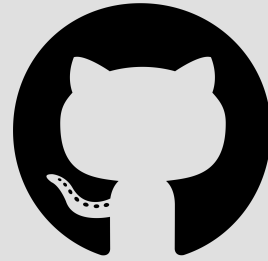


Developer Program Member

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What's on GitHub?

How is it related to AAE?



Flight control softwares for UAV

Ardupilot, PX4 and more



ArduPilot / ardupilot

☆ Star 6k

<> Code Issues Pull requests

Open Move test_onboard_logging_generation outside autotest.py

khancyr commented on May 27

Feature request

Is your feature request related to a problem? Please describe.
Move test_onboard_logging_generation outside autotest.py to all to validate logger documentation before running the full autotest suite. Ideally, on CI it should run on build_csharp with

PX4 / PX4-Autopilot

☆ Star 4.7k

<> Code Issues Pull requests

PX4 Autopilot Software

uav drone ros px4 pixhawk uas dronecode autopilot mavlink autonomous drones
dds hacktoberfest ugv mavros multicopter qgroundcontrol fixed-wing fast-rtps avoidance

Updated 19 minutes ago C++

mavlink / qgroundcontrol

☆ Star 1.9k

<> Code Issues Pull requests

Cross-platform ground control station for drones (Android, iOS, Mac OS, Linux, Windows)

qt uav drone px4 pixhawk uas mavlink ardupilot

Updated 23 hours ago C++

About These Softwares

Ardupilot:

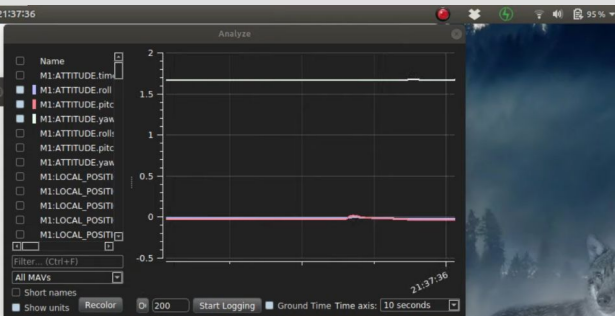
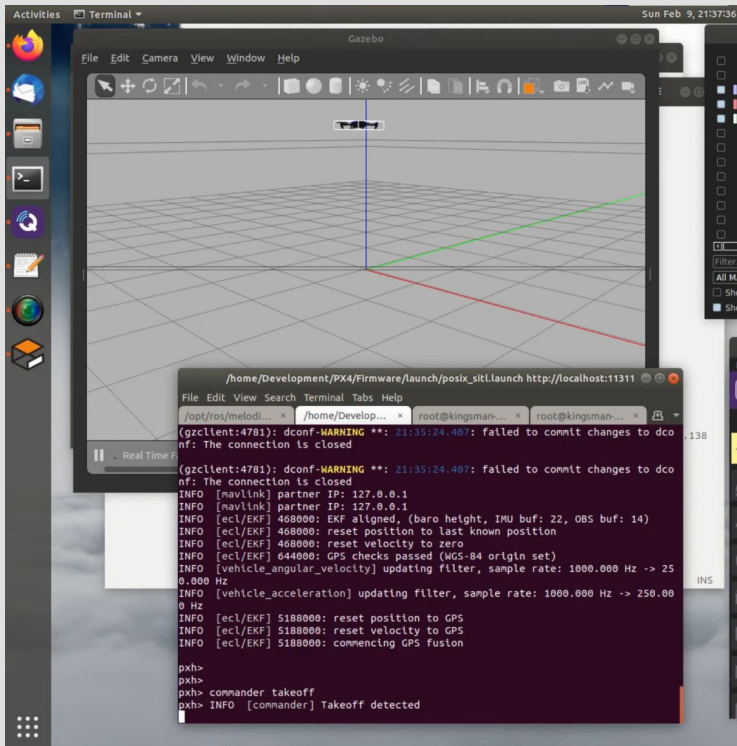
- Open source software suite
- Quadcopters, VTOL and more
- Cross platform
- Over 10 years of development and improvement



PX4:

- Also open source
- Works with QGC and MAVLink (Also available in GitHub)





The QGroundControl v3.5.6 interface displays the 'Vehicle Setup' summary. The interface includes a sidebar with navigation options and a main area showing the status of various components. The 'Airframe' section shows the system ID, airframe type, and vehicle version. The 'Sensors' section shows the status of the compass and accelerometer. The 'Radio' section shows the status of the radio module. The 'Flight Modes' section shows the status of various flight modes. The 'Power' section shows the status of the power system. The 'Safety' section shows the status of the safety system.

QGroundControl v3.5.6

File Widgets

Vehicle Setup

Below you will find a summary of the settings for your vehicle. To the left are the setup menus for each component.

Summary

Airframe		Sensors	
System ID	1	Compass 0	Ready
Airframe type	Quadrotor Wide	Gyro	Ready
Vehicle	3DR Iris Quadrotor	Accelerometer	Ready
Firmware Version	1.11.0dev		

Radio		Flight Modes	
Roll	Setup required	Mode switch	
Pitch	Setup required	Flight Mode 1	
Yaw	Setup required	Flight Mode 2	
Throttle	Setup required	Flight Mode 3	
Aux1	Disabled	Flight Mode 4	
Aux2	Disabled	Flight Mode 5	

Aviation Services Engineering

Logistics and Facility
Management and more

airport

Here are 148 public repositories matching this topic...

Language: All

Sort: Best match

Ysurac / FlightAirMap

Star 388

Code Issues Pull requests

Open source project displaying live aircrafts, ships or trackers on 2D/3D map. Browse through the data based on a particular aircraft, airline, airport, tracker or vessel to search through the database or see extensive statistics. Can use ADS-B in SBS1 format (dump1090, Radarcapex...). VRS, VA (VATSIM, IVAO whazzup.txt, phpvms...). ACARS (acarsdec, acarsdeco2), APRS, AIS as datasource.

tracker cesium crash metar airport airline flight ship vatsim aircraft iwa acars
glidermet phpvms notam modes ads-b sbs vessel 3d-map

Updated on Nov 25, 2020 TSOL

felix-dumit / FSDAirportFlipLabel

Star 83

Code Issues Pull requests

UILabel like old Airport flipping labels

ios label ios-animation airport

Updated on Mar 9, 2018 Objective-C

Ivysauro / CNRT

Star 74

Code Issues Pull requests Discussions

中国轨道交通数据库（非技术类） - 另一角度看地铁 / Data base of China Rail Transit (Non-tech) - Another view of Rail Transit

bus metro payment railway china airport subway rail-transit

Updated 3 days ago SCSS

gravity-EDDS / EDDS-freeware-releases

Star 57

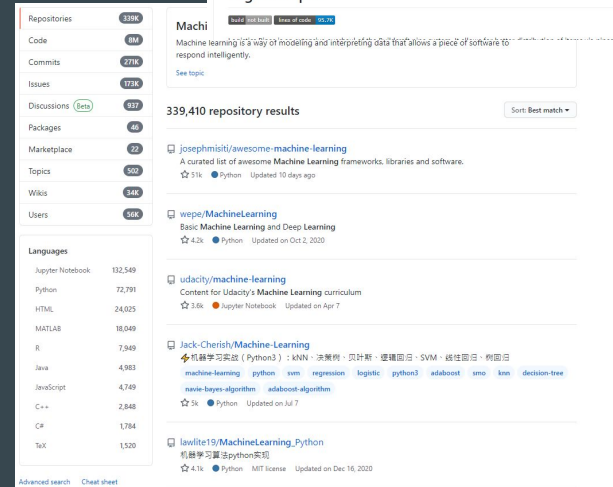
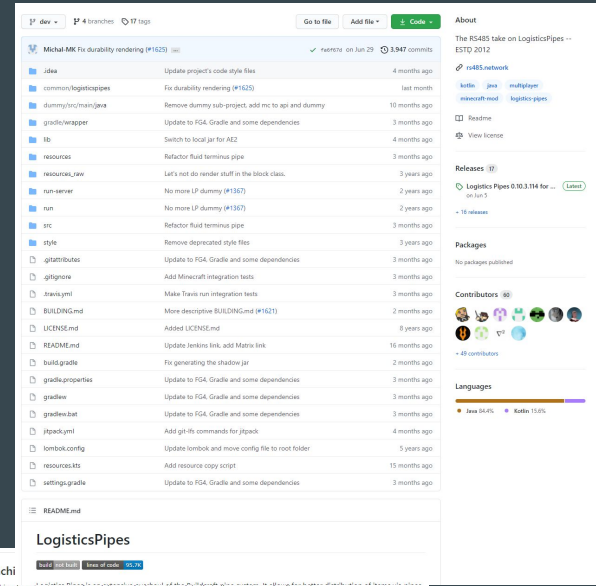
Code Issues Pull requests

Logistics and Facility Management

- Data analysis resources
- System modelling and simulations
- Logistical models

Machine learning for data analysis

- Faster analysis
- Potential extra self-learning for students
- Extremely beneficial to their careers




Aeronautical Engineering

Material, aircraft designs, CFD
and more

computational-fluid-dynamics

Here are 198 public repositories matching this topic...

Language: All ▾ Sort: Best match ▾

 **doyubkim / fluid-engine-dev** ☆ Star 1.1k


[Code](#) [Issues](#) [Pull requests](#)

Fluid simulation engine for computer graphics applications

[c-plus-plus](#) [visual-studio](#) [sdk](#) [animation](#) [computer-graphics](#) [physics-engine](#) [computational-physics](#)

[fluid-simulation-engine](#) [computational-fluid-dynamics](#)

Updated on Apr 25 C++

 **CubbyFlow / CubbyFlow** ☆ Star 175


[Code](#) [Issues](#) [Pull requests](#)

Voxel-based fluid simulation engine for computer games

[c-plus-plus](#) [cpp](#) [computer-graphics](#) [physics-engine](#) [computational-physics](#) [cpp17](#)

[fluid-simulation-engine](#) [computational-fluid-dynamics](#)

Updated 6 days ago C++

 **AvtechScientific / ASL** ☆ Star 153


[Code](#) [Issues](#) [Pull requests](#)

Advanced Simulation Library - hardware accelerated multiphysics simulation platform.

[crystallography](#) [gpgpu](#) [scientific-computing](#) [high-performance-computing](#) [design-space-exploration](#)

[computational-fluid-dynamics](#) [virtual-sensing](#) [image-guided-surgery](#) [computer-aided-engineering](#)

Updated on Dec 21, 2018 C++

 **lolverhennigh / Steady-State-Flow-With-Neural-Nets** ☆ Star 119


[Code](#) [Issues](#) [Pull requests](#)

A Tensorflow re-implementation of the paper Convolutional Neural Networks for Steady Flow Approximation

aircraft-design


Here are 21 public repositories matching this topic...

Language: All ▾ Sort: Best match ▾

 **JSBSim-Team / jsbsim** ☆ Star 394

[Code](#) [Issues](#) [Pull requests](#) [Discussions](#)

[Open](#) XML validation 14

 boccone commented on Jan 12, 2019

JSBSim provides schemas for XML validation (3885ia.xml for flight models, 3885iaScript.xml for script files and 3885iaSystem.xml for system files) but they have not been updated for a while so they might reject perfectly valid XML files.

XML files can be tested with xmlint:


```
xmlint --root --schema 3885ia.xml <path>...</path>.xml
```


[Read more](#)

[Stop](#) [Help](#) [Good first issue](#)

Aero Sandbox

by Peter Sharpe



 **peterdsharpe / AeroSandbox** ♡ Sponsor ☆ Star 236

[Code](#) [Issues](#) [Pull requests](#)

Aircraft design optimization made fast through modern automatic differentiation. Plug-and-play analysis tools for aerodynamics, propulsion, structures, trajectory design, and much, much more.

[python](#) [analysis](#) [optimization](#) [aerospace](#) [automatic-differentiation](#) [airplane](#) [cfd](#) [aircraft](#)

[aerodynamics](#) [vfn](#) [xflr](#) [aircraft-design](#) [mbo](#) [mdao](#) [aerodynamic-analysis](#) [3d-panel](#)

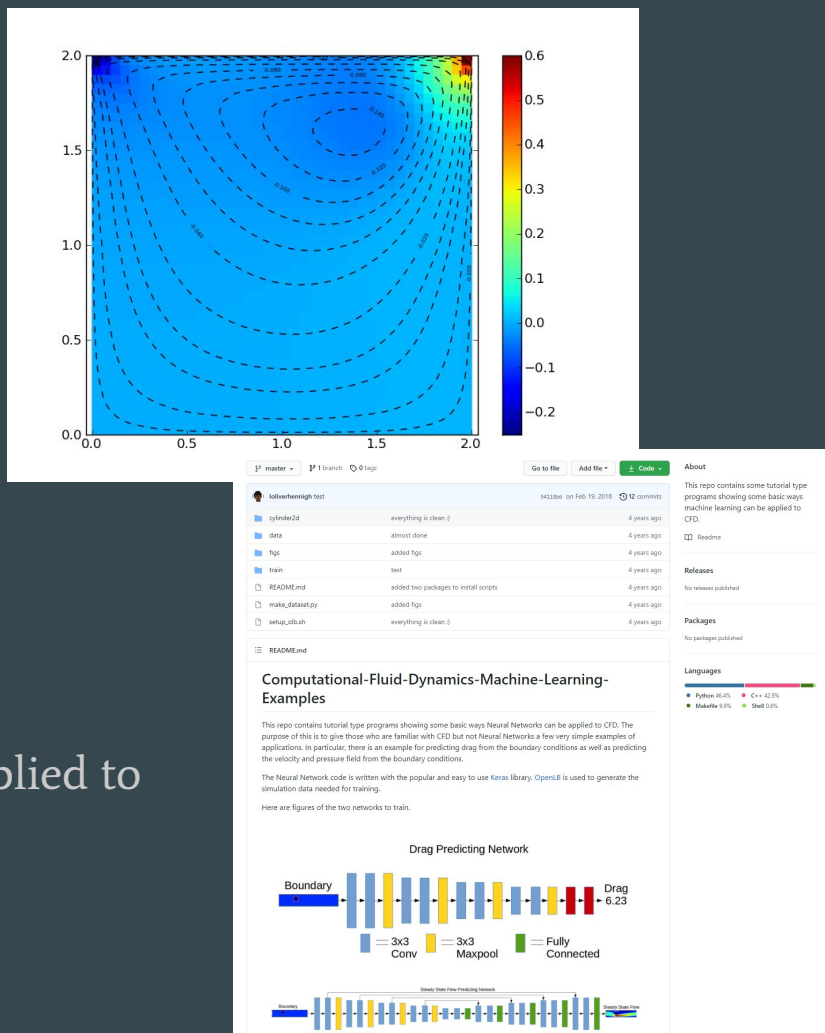
Updated 6 days ago · [Source](#) [Repository](#)

CFD Python

- Full course for CFD Python
- Course Materials (Lectures and videos)
- Software resources


CFD and Machine Learning

- Making use of ML
- Showing how neural networks can be applied to CFD



Aircraft Maintenance

Propulsion, NDT and more




NASA Jet Propulsion Laboratory

A world leader in the robotic exploration of space

📍 Pasadena, California, US 🌐 <http://www.jpl.nasa.gov> ✉ github@jpl.nasa.gov


🏠 Overview 📁 Repositories 26 📦 Packages 👤 People 6 📁 Projects

Pinned

**open-source-rover**


A build-it-yourself, 6-wheel rover based on the rovers on Mars!

🟡 Gnuplot ⭐ 6.8k 🐙 1.1k

**osr-rover-code**


Code that runs on the Open Source Rover

🟢 Python ⭐ 267 🐙 96

**COVID-19-respirators**


JPL designed 3D and tested printed respirators to help with the COVID-19 pandemic response.

🟡 G-code ⭐ 104 🐙 18

**osr-android-app**


Android application used to control the Open Source Rover

🟡 Java ⭐ 59 🐙 30

**SPOC**

A website showcasing SPOC (Soil Property and Object Classification), a deep learning-based terrain classifier for Mars rovers

🔴 HTML ⭐ 6 🐙 1

**spoc_lite**

A light-weight, experimental terrain classifier for Mars rovers

🔴 C++ ⭐ 7 🐙 4

Repositories

Type ▾Language ▾Sort ▾

itslive

A NASA MEASURES project to provide automated, low latency, global glacier flow and elevation change datasets

🟡 Jupyter Notebook ⭐ 4 🏢 MIT 🐙 0 🕒 3 📁 0

LiveViewLegacy

Real-time tools for Imaging Spectroscopy Data

🔴 C++ ⭐ 18 🐙 7 🕒 0 📁 0

open-source-rover

A build-it-yourself, 6-wheel rover based on the rovers on Mars!

🟡 Gnuplot ⭐ 6,765 🏢 Apache-2.0 🐙 1,104 🕒 34 (1 issue needs help) 📁 8

itslive-projects

🟡 Jupyter Notebook ⭐ 0 🏢 MIT 🐙 0 🕒 0 📁 0

sstmp

Solar System Treks Mosaic Pipeline

🟢 Python ⭐ 4 🏢 Apache-2.0 🐙 0 🕒 21 📁 0

jsd

Just SOEM Drivers

Example on NDT

- Resources on the whole conference
 - 20th World Conference on Non-Destructive Testing
- Documentation and software resources
- Applying LSTM to NDT

The screenshot shows the GitHub repository page for 'xaviergoby/LSTMforSHM'. The repository is in the 'master' branch, has 3 branches, and 0 tags. It was created on Oct 21, 2020, and has 67 commits. The file list includes: configs_and_settings (recent work, 10 months ago), literature (non-code commit, 13 months ago), results (Merge branch 'master' of https://github.com/xaviergoby/LSTMforSHM, 10 months ago), src (recent work, 10 months ago), .gitignore (recent work, 10 months ago), LICENSE (Initial commit, 2 years ago), README.md (Revert "Revert "Results Update"", 13 months ago), _init_.py (1st commit of og Vicent lstm & my data_loading script w/ data and labels, 2 years ago), call_mainscript.py (Update results, 10 months ago), main.py (recent work, 10 months ago), main_v2.py (Merge branch 'master' of https://github.com/xaviergoby/LSTMforSHM, 10 months ago), main_v3_xav.py (recent work, 10 months ago), p2atR.jpg (non-code commit, 13 months ago), and settings.py (recent work, 10 months ago).

The README.md file is displayed, containing the following information:

Sequential Modelling in Data-Driven Approach for Structural Health Monitoring by Recurrent Convolutional Neural Networks

Conference: 20th World Conference on Non-Destructive Testing
Location & Date: South Korea, Seoul - June 2020
Co-authors: Ewald V., Goby X., Groves R.M. & Benedictus R.
Laboratory: TU Delft Aerospace NDT Lab

Usage Instruction

In order to make use of this project all you need mainly be concerned with is the main.py Python script. In it you shall (hopefully) find yourself a more than sufficient amount of documentation in order to understand and be able to make use of it!

Dev Progress Log-Journal, Data Characteristics & Background Information

Notes:

The right sidebar shows the repository's metadata: Application of LSTM network for Structural Health Monitoring & Non-Destructive Testing, repository link, tags (computer-vision, timeseries, tensorflow, keras, cnn, waves, lstm, supervised-learning, classification, shm, ultrasonic-sensor, ndt, structural-engineering, structural-analysis, convlstm, structural-health-monitoring, lambwaves, pzt, aircraft-inspection, non-destructive-testing), Readme, MIT License, Releases (No releases published), Packages (No packages published), Contributors (xaviergoby, Alexander Xavier O'Rourke, vewald), Environments (github-pages, Active), and Languages (Python 100.0%).

Navigation and Positioning

RTKLIB, VINS, ORB_SLAM3, ROS and more

The image displays three screenshots of GitHub repository pages, arranged vertically. Each screenshot shows the repository's structure, including files and folders, and the right-hand sidebar with information like 'About', 'Releases', 'Packages', and 'Contributors'.

- Top Screenshot: ORB_SLAM3**
 - Repository: `U2-SLAMLab / ORB_SLAM3`
 - Files: `richard-ehvira Readme.md updated`, `Examples`, `Thirdparty`, `Vocabulary`, `evaluation`, `include`, `src`, `.gitignore`, `CMakeLists.txt`, `Changelog.md`, `Dependencies.md`, `LICENSE`, `README.md`, `build.sh`, `build_ros.sh`.
 - Right sidebar: 'About' (ORB-SLAM3: An Accurate Open-Source Library for Visual, Visual-Inertial and Multi-Map SLAM), 'Releases' (2 tags), 'Packages' (No packages published), 'Contributors' (4).
- Middle Screenshot: RTKLIB**
 - Repository: `tomojitakasu / RTKLIB`
 - Files: `app`, `bin`, `brd`, `data`, `doc`, `lib`, `src`, `Test`.
 - Right sidebar: 'About' (No description, website, or topics provided), 'Releases' (3), 'Packages' (18 published).
- Bottom Screenshot: VINS-Mono**
 - Repository: `HKUST-Aerial-Robotics / VINS-Mono`
 - Files: `shanzu update readme`, `ar_demo`, `benchmark_publisher`, `camera_model`, `config`, `docker`, `feature_tracker`, `pose_graph`, `support_files`, `vins_estimator`, `.gitignore`, `LICENSE`, `README.md`.
 - Right sidebar: 'About' (A Robust and Versatile Monocular Visual-Inertial State Estimator), 'Releases' (No releases published), 'Packages' (No packages published), 'Contributors' (5), 'Languages' (C++ 92.0%, CMake 1.0%, Other 0.3%).