

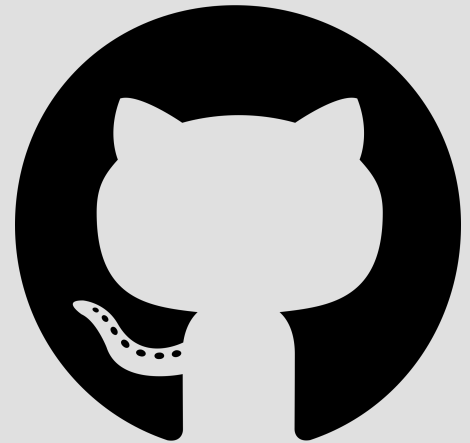
# What is GitHub?

...

For AAE FYP students



# What is GitHub?



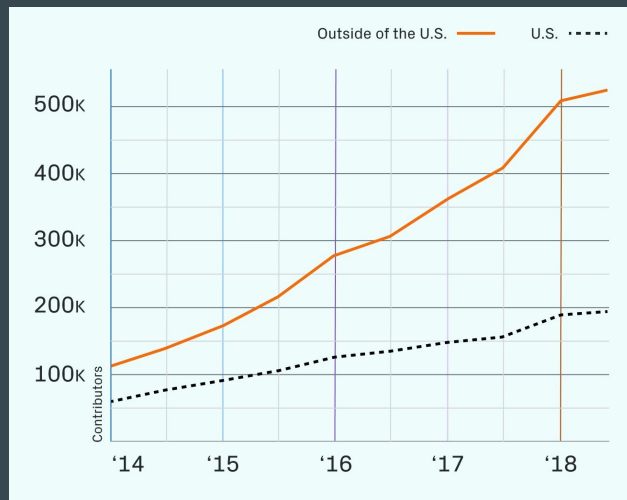
# What is Github?



- 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 45

Packages

People 12

Projects

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) 110 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 gprof  
C++ BSD-3-Clause 10 1 0 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 0 0 Updated on Jul 1

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

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

**linux**  
Linux sources  
GPL-2.0 149 207 0 0 Updated on Jun 15

**ansible-culler**

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

Repositories 426

Packages

People 436

Projects 12

Sponsoring 17

Type

Language

Sort

**Graphormer**  
This is the official implementation for "Do Transformers Really Perform Bad for Graph Representation?"  
graph transformer  
Python MIT 50 399 0 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 22,420 208 (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 0 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

Cr TypeScript Python JavaScript C++

Most used topics

azure microsoft python machine-learning typescript

People

4.5k


Sponsoring

44

Github Sponsor

Developer Program Member

Report abuse

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

Repositories 2.1k

Packages

People 1.2k

Projects

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) 110 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) 115 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) 111 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 0 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](mailto: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 >

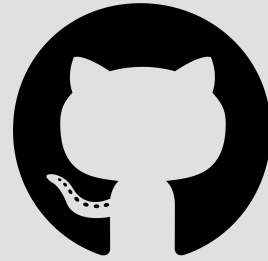


Developer Program Member

Report abuse

# 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:

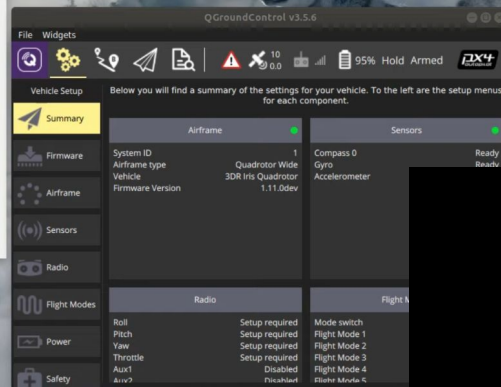
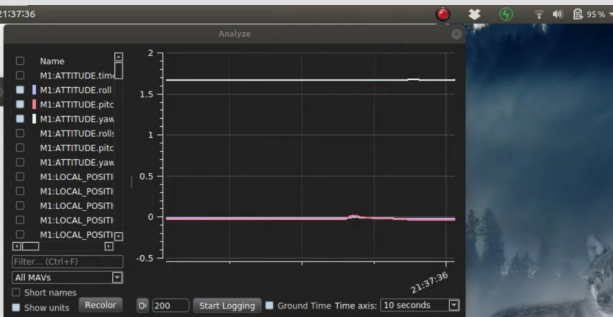
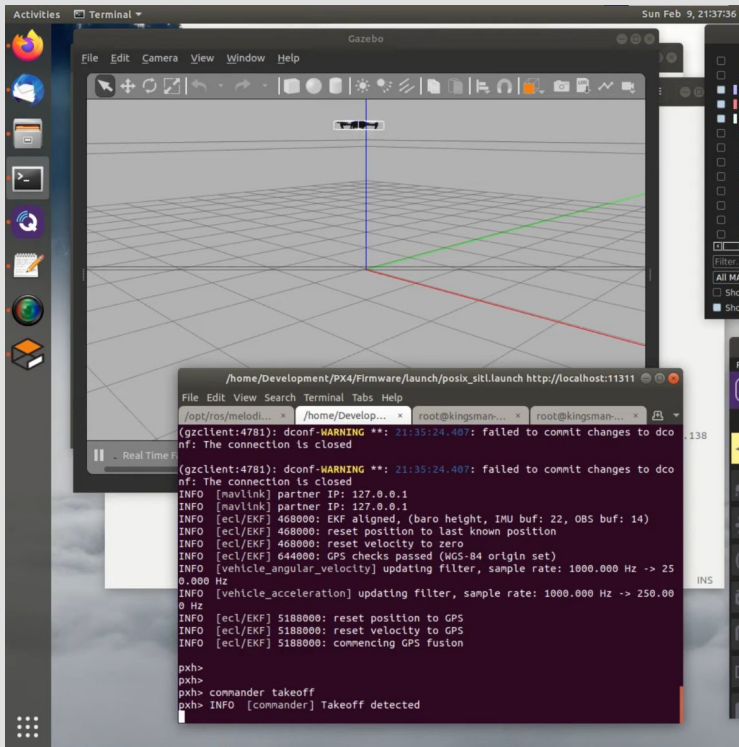
- Open source software suite
- Quadcopters, VTOL and more
- Cross platform
- Over 10 years of development and improvement



## PX4:

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





# 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

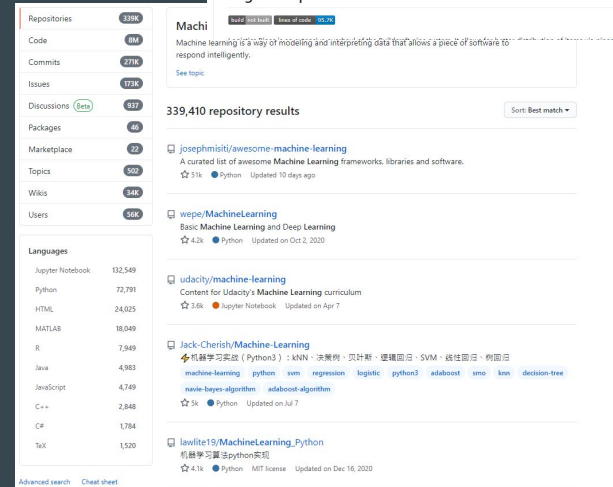
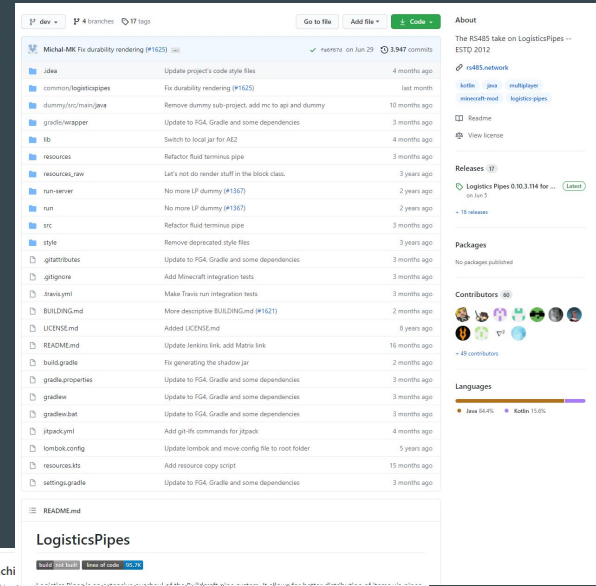
Code Issues Pull requests

# 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

cplusplus 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

boconeri 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 vlm xflr aircraft-design mdo mdae aerodynamic-analysis 3d-panel

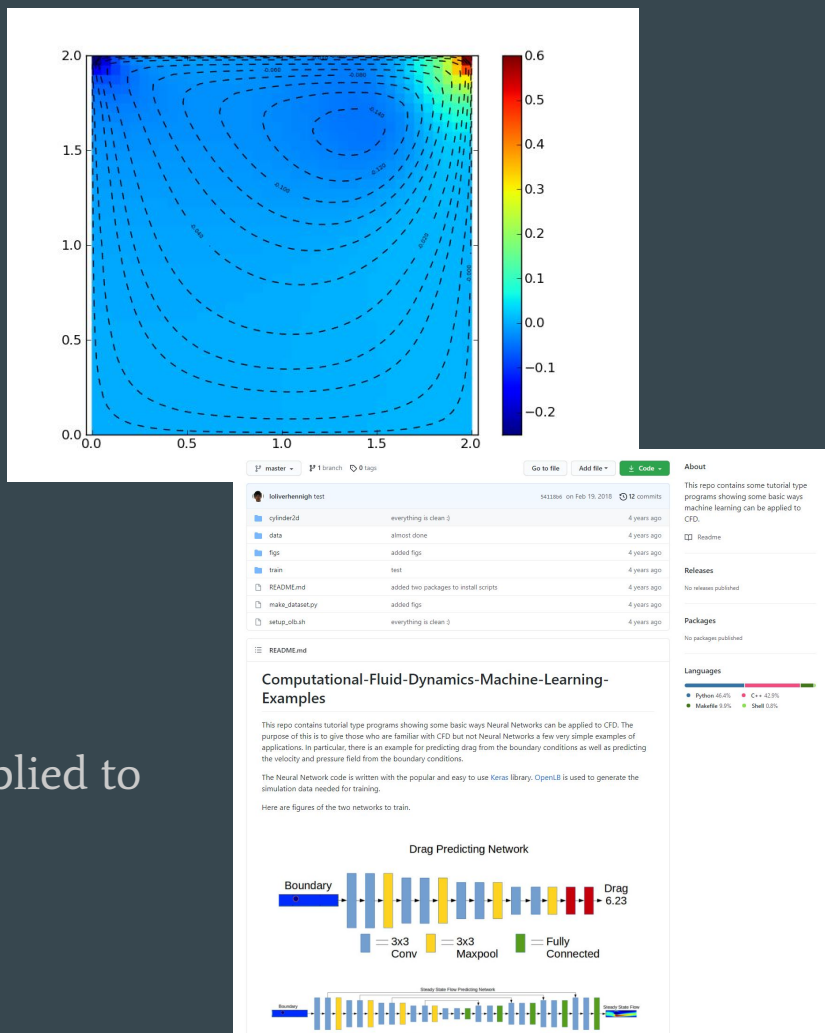
Updated 4 days ago 1 contributor

# 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](mailto: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: `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: `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%).