

# Otvorena nauka u praksi

Primjer upotrebe otvorenih alata i podataka za kreiranje servisa za klasifikaciju satelitskih slika

Vladimir Risojević  
Univerzitet u Banjoj Luci



# Upload images

3 files selected

## Task

Classification

# Upload images

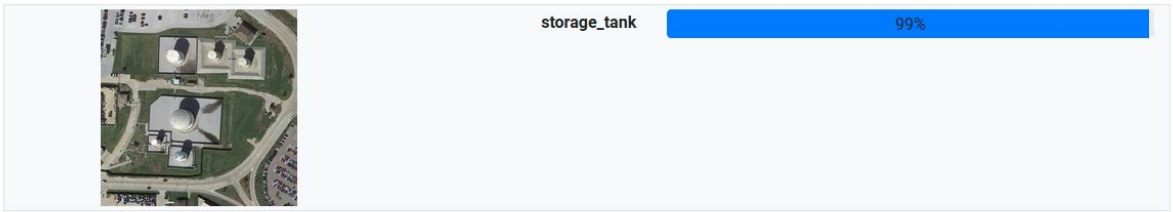
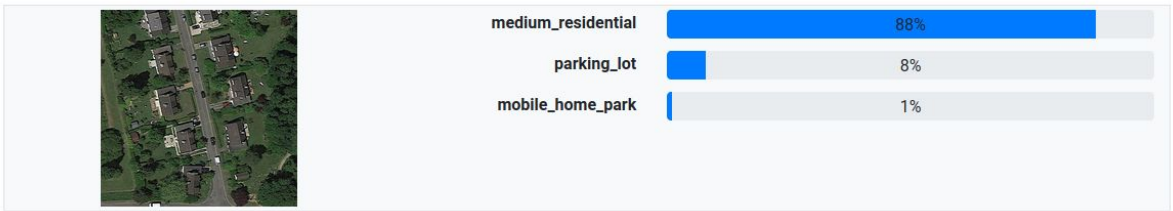
3 files selected Browse

## Task

Classification

Submit

## Classification results

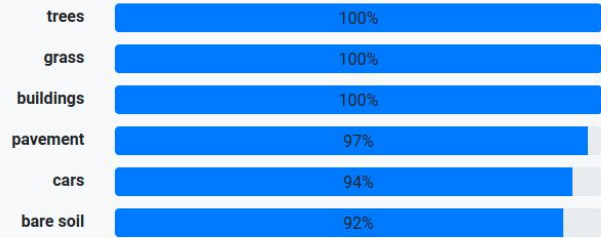


# Upload images

## Task

## Tagging results



## Enter image URL

Task

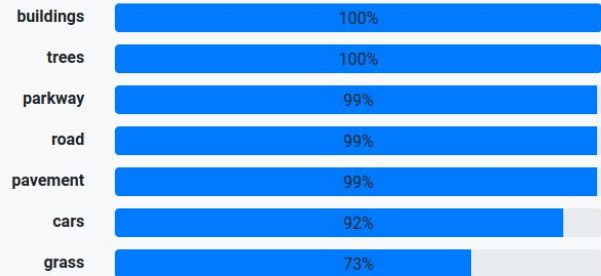
Submit

## Classification results

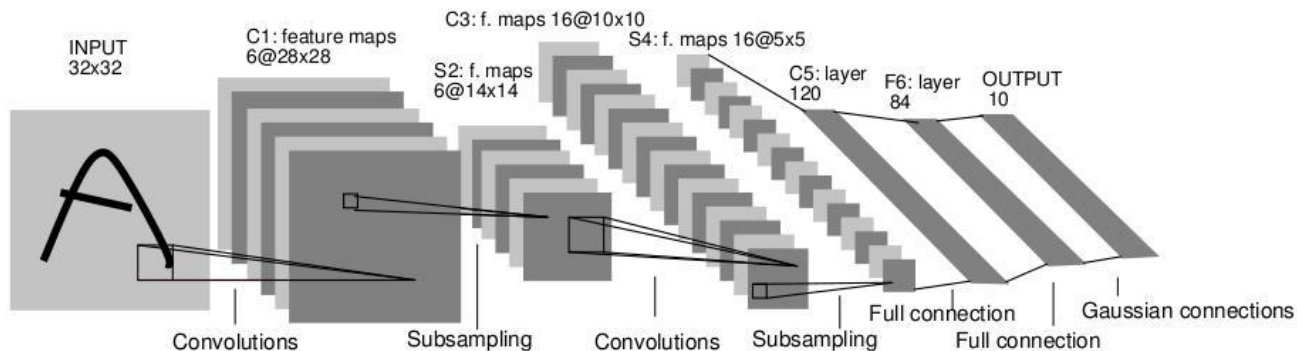


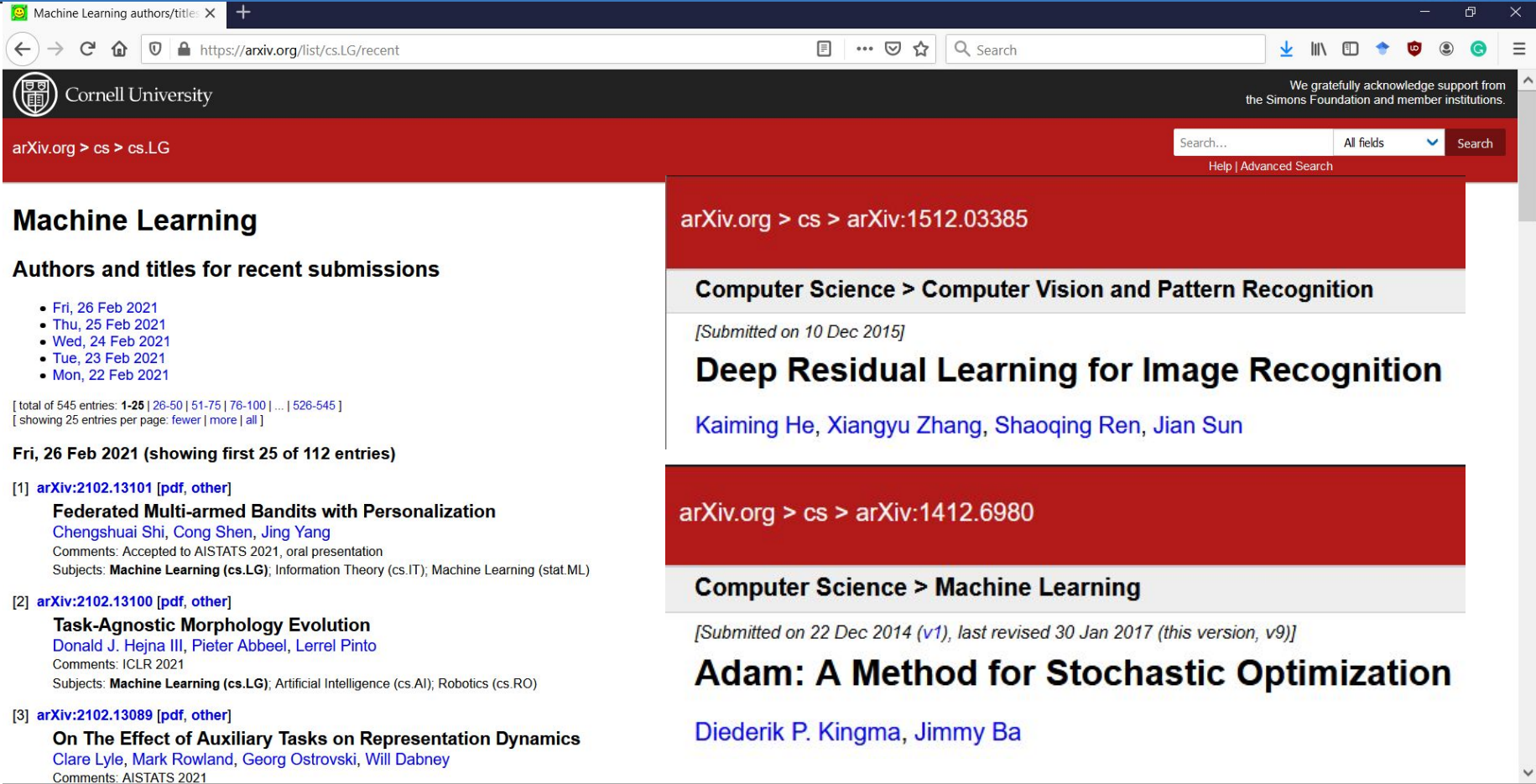


## Tagging results



- Mašinsko učenje - duboke neuronske mreže
- Specijalizovana struktura povezivanja slojeva
- Izdvajanje obilježja u više slojeva
- Viši slojevi izdvajaju globalnija, invarijantna obilježja
- Zadnji sloj je klasifikator
- Obučavanje na primjerima slika - klasa





Machine Learning authors/title: X +

https://arxiv.org/list/cs.LG/recent

Cornell University

We gratefully acknowledge support from the Simons Foundation and member institutions.

arXiv.org > cs > cs.LG

Search... All fields Search

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## Machine Learning

### Authors and titles for recent submissions

- Fri, 26 Feb 2021
- Thu, 25 Feb 2021
- Wed, 24 Feb 2021
- Tue, 23 Feb 2021
- Mon, 22 Feb 2021

[ total of 545 entries: 1-25 | 26-50 | 51-75 | 76-100 | ... | 526-545 ]  
[ showing 25 entries per page: fewer | more | all ]

**Fri, 26 Feb 2021 (showing first 25 of 112 entries)**

[1] [arXiv:2102.13101](#) [pdf, other]  
**Federated Multi-armed Bandits with Personalization**  
Chengshuai Shi, Cong Shen, Jing Yang  
Comments: Accepted to AISTATS 2021, oral presentation  
Subjects: **Machine Learning (cs.LG)**; Information Theory (cs.IT); Machine Learning (stat.ML)

[2] [arXiv:2102.13100](#) [pdf, other]  
**Task-Agnostic Morphology Evolution**  
Donald J. Hejna III, Pieter Abbeel, Lerrel Pinto  
Comments: ICLR 2021  
Subjects: **Machine Learning (cs.LG)**; Artificial Intelligence (cs.AI); Robotics (cs.RO)

[3] [arXiv:2102.13089](#) [pdf, other]  
**On The Effect of Auxiliary Tasks on Representation Dynamics**  
Clare Lyle, Mark Rowland, Georg Ostrovski, Will Dabney  
Comments: AISTATS 2021

arXiv.org > cs > arXiv:1512.03385

**Computer Science > Computer Vision and Pattern Recognition**

[Submitted on 10 Dec 2015]

## Deep Residual Learning for Image Recognition

Kaiming He, Xiangyu Zhang, Shaoqing Ren, Jian Sun

arXiv.org > cs > arXiv:1412.6980

**Computer Science > Machine Learning**

[Submitted on 22 Dec 2014 (v1), last revised 30 Jan 2017 (this version, v9)]

## Adam: A Method for Stochastic Optimization

Diederik P. Kingma, Jimmy Ba

- Alati slobodnog i softvera otvorenog koda
  - Programski jezik
    - Python
  - Mašinsko učenje
    - TensorFlow
  - Veb aplikacija
    - Bootstrap
    - Flask
    - NGINX
  - Isporuka softvera
    - Docker
  - Možemo se koncentrisati na rješavanje problema
-

# Softver otvorenog koda Github

GitHub - tensorflow/tensorflow

https://github.com/tensorflow/tensorflow

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tensorflow / tensorflow

Notifications Star 154k Fork 84.1k

Code Issues 3.8k Pull requests 219 Actions Projects 1 Security 35 Insights

master 40 branches 133 tags

Go to file Code

chsigg and tensorflow-gardener Use mlir::OpState::operator->() to get to ... 105,646 commits

.github	Don't run nightly update job in forks.	20 days ago
tensorflow	Use mlir::OpState::operator->() to get to methods of mlir::Operation.	2 hours ago
third_party	Integrate LLVM at <a href="#">llvm/llvm-project@5977d42</a>	2 days ago
tools	Merge pull request #25673 from Ryan-Qiyu-Jiang:env_capture_script_mo...	2 years ago
.bazelrc	Fix build description typos.	19 days ago
.bazelversion	Updating TensorFlow's bazel version 4.0.0 (the first LTS release).	last month
.gitignore	Ignore CoreML BUILD files which are generated by the configure script	11 months ago
.pylintrc	Add soft-link to pylintrc to project root	2 years ago
ACKNOWLEDGMENTS	TensorFlow: Improve performance of Alexnet	5 years ago
AUTHORS	Format AUTHORS file (#14881)	3 years ago
BUILD	[NFC, internal change] Polish copybara workflow file.	last month
CODEOWNERS	Add penpornk@ as a /tensorflow/core/kernels/mkl/ reviewer	3 months ago

About

An Open Source Machine Learning Framework for Everyone

[tensorflow.org](#)

python machine-learning

deep-neural-networks deep-learning

neural-network tensorflow ml

distributed

Readme

Apache-2.0 License

Releases 133

TensorFlow 2.4.1 Latest on Jan 21

+ 132 releases

risojevicv/NI4OS-RSSC: NI4OS | X

https://github.com/risojevicv/NI4OS-RSSC

risojevicv / NI4OS-RSSC

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risojevicv Update README.md c7bacf4 3 days ago 28 commits

service	Added models directory. Updated .gitignore.	5 days ago
webapp	Webapp for tagging	6 days ago
.gitignore	Added models directory. Updated .gitignore.	5 days ago
LICENSE	Initial commit	5 months ago
README.md	Update README.md	3 days ago
docker-compose.yml	Combined service and webapp.	3 months ago
image_classification_jpeg_list.py	Example API usage	3 months ago
multilabel_image_classification_jpeg_li...	Webapp for tagging	6 days ago

README.md

## NI4OS-RSSC

About

### NI4OS Remote Sensing Scene Classification

- Readme
- MIT License

Releases

No releases published  
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Packages

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Contributors 2

- risojevicv



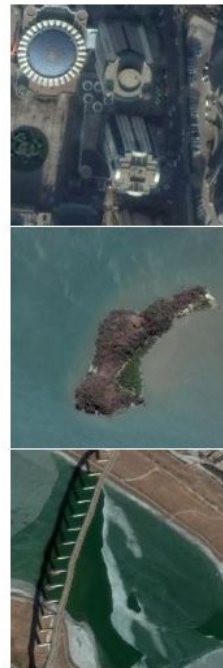
- Google Earth
- Sateliti:
  - GeoEye-1, WorldView-1, WorldView-2, SPOT-7, Pleiades-1A, and Pleiades-1B
- 109161 slika
- 46 kategorija
- 1500-3000 slika po kategoriji
- 256×256 piksela
- Piksel - 10 m do 0.1 m
- Svaka slika je označena sa 1-13 od 60 oznaka



Basketball court,  
Buildings,  
Pavement, Road,  
Trees

Buildings, Cars,  
Dense residential  
area, Grass,  
Pavement, Road,  
Trees

Bare soil, Buildings,  
Cars, Grass,  
Parking lot,  
Pavement, Road,  
Trees

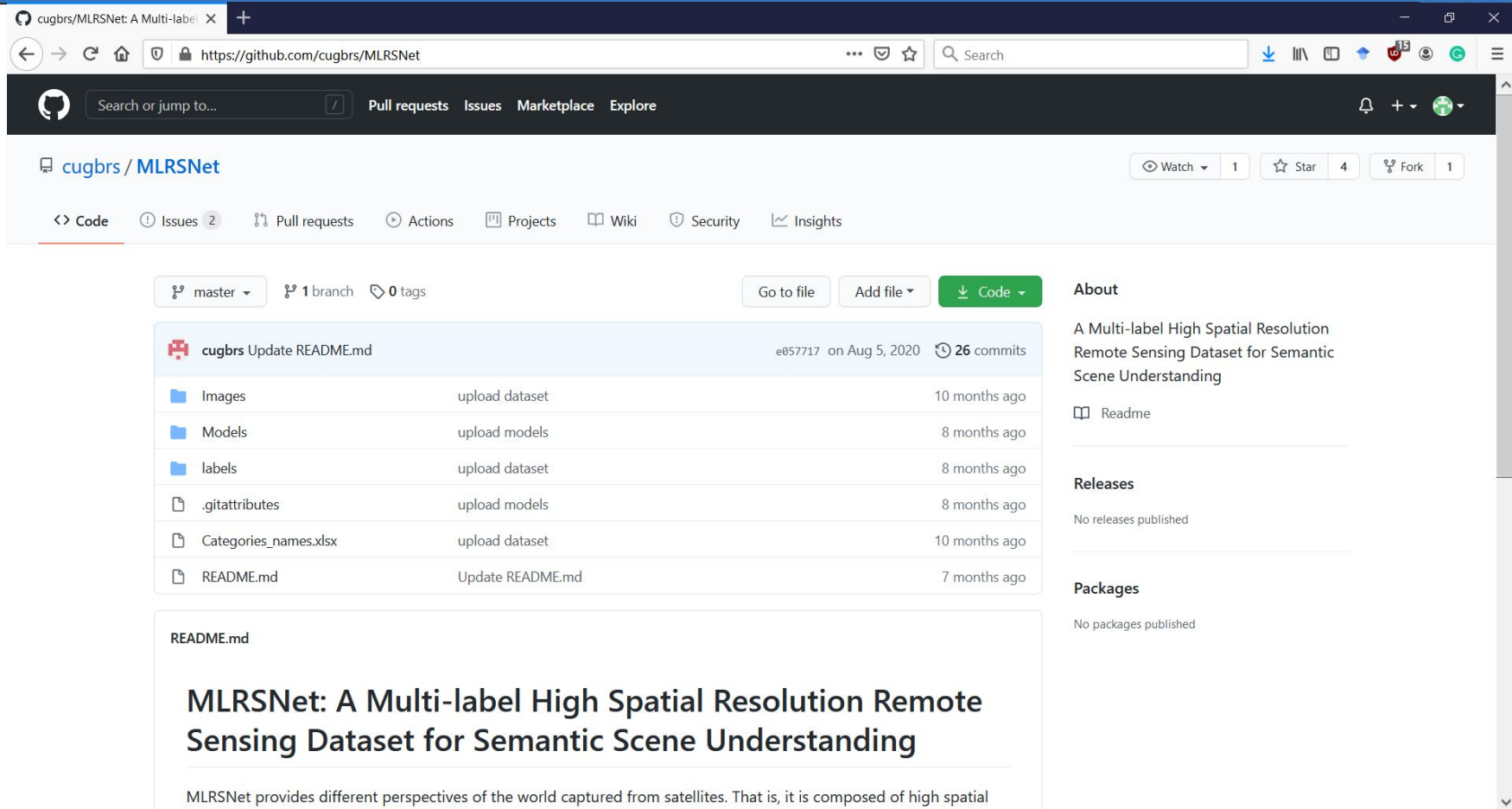


Buildings, Cars,  
Parking lot,  
Pavement, Road,  
Trees

Trees, Grass, Island,  
Sea, Water

Bare soil, Grass,  
Railway

# Podaci MLRSNet baza slika



The screenshot shows the GitHub repository page for 'cugbrs/MLRSNet'. The browser address bar shows the URL 'https://github.com/cugbrs/MLRSNet'. The repository name 'cugbrs / MLRSNet' is displayed at the top. The page includes navigation tabs for Code, Issues (2), Pull requests, Actions, Projects, Wiki, Security, and Insights. The repository statistics show 1 Watch, 4 Stars, and 1 Fork. The file list shows a recent commit 'cugbrs Update README.md' on Aug 5, 2020, with 26 commits. The file list includes 'Images', 'Models', 'labels', '.gitattributes', 'Categories\_names.xlsx', and 'README.md'. The 'About' section describes the dataset as 'A Multi-label High Spatial Resolution Remote Sensing Dataset for Semantic Scene Understanding'. The 'Releases' and 'Packages' sections both show 'No releases published' and 'No packages published' respectively.

cugbrs/MLRSNet

Watch 1 Star 4 Fork 1

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Go to file Add file Code

File	Commit	Time
Images	upload dataset	10 months ago
Models	upload models	8 months ago
labels	upload dataset	8 months ago
.gitattributes	upload models	8 months ago
Categories_names.xlsx	upload dataset	10 months ago
README.md	Update README.md	7 months ago

README.md

## MLRSNet: A Multi-label High Spatial Resolution Remote Sensing Dataset for Semantic Scene Understanding

MLRSNet provides different perspectives of the world captured from satellites. That is, it is composed of high spatial

**About**  
A Multi-label High Spatial Resolution Remote Sensing Dataset for Semantic Scene Understanding

**Releases**  
No releases published

**Packages**  
No packages published





## MLRSNet: A Multi-label High Spatial Resolution Remote Sensing Dataset for Semantic Scene Understanding

0  
Citations

Published: 13-07-2020 | Version 2 | DOI: 10.17632/7j9bv9vwsx.2

Contributors: Xiaoman Qi, Panpan Zhu, Yuebin Wang, Liqiang Zhang, Junhuan Peng, Mengfan Wu, Jialong Chen, Xudong Zhao, Ning Zang, P.Takis Mathiopoulos

### Description

MLRSNet provides different perspectives of the world captured from satellites. That is, it is composed of high spatial resolution optical satellite images. MLRSNet contains 109,161 remote sensing images that are annotated into 46 categories, and the number of sample images in a category varies from 1,500 to 3,000. The images have a fixed size of 256x256 pixels with various pixel resolutions (~10m to 0.1m). Moreover, each image in the dataset is tagged with several of 60 predefined class labels, and the number of labels associated with each image varies from 1 to 13. The dataset can be used for multi-label based image classification, multi-label based image retrieval, and image segmentation.

The Dataset includes:

1. Images folder: 46 categories, 109,161 high-spatial resolution remote sensing images.
2. Labels folders: each category has a .csv file.
3. Categories\_names.xlsx: Sheet1 lists the names of 46 categories, and the Sheet2 shows the associated multi-label to each category.

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### Files

### Dataset metrics

#### Usage

Views:	385
Downloads:	212



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### Latest version

#### Version 2

Published: 13-07-2020  
DOI: 10.17632/7j9bv9vwsx.2

#### Cite this dataset

Qi, Xiaoman; Zhu, Panpan; Wang, Yuebin; Zhang, Liqiang; Peng, Junhuan; Wu, Mengfan; Chen, Jialong; Zhao, Xudong; Zang, Ning; Mathiopoulos, P.Takis (2020), "MLRSNet: A Multi-label High Spatial Resolution Remote Sensing Dataset for Semantic Scene Understanding".

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# Datasets

Search Terms

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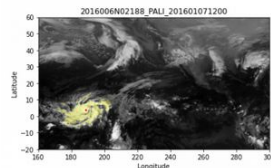
## DATASET CATEGORIES

Artificial Intelligence (296)

Astronomy (8)

Biomedical and Health Sciences (155)

Biophysiological Signals (62)



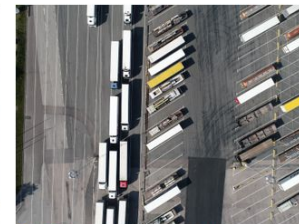
🕒 2016 tropical cyclone cloud



🕒 Videos for Three-dimensional



🕒 2018 IEEE GRSS Data Fusion



🕒 BTH Trucks in Aerial Images

Zenodo

https://zenodo.org/search?page=1&size=20&q=remote sensing

zenodo remote sensing Upload Communities vlado@etfbl.net

All versions

Access Right

- Open (8688)
- Closed (264)
- Restricted (71)
- Embargoed (25)

File Type

- Pdf (6902)
- Zip (614)
- Jpg (231)
- Html (178)
- Docx (171)
- Csv (142)
- Xml (138)
- Txt (136)
- Png (134)

Found 9048 results.

1 2 3 4 5 6 7 8 9

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January 22, 2019 (v1) Journal article Open Access View

### XF-ROVIM. A field robot to detect olive trees infected by *Xylella fastidiosa* using proximal sensing

Beatriz Rey, Nuria Aleixos, Sergio Cubero, Jose Blasco;

Abstract: The use of remote sensing to map the distribution of plant diseases has evolved considerably over the last three decades and can be performed at different scales, depending on the area to be monitored, as well as the spatial and spectral resolution required. This work describes the develop

Uploaded on December 2, 2019

Published in Remote Sensing. Special Issue Advances in Remote Sensing Applications for the Detection of Biological Invasions., vol. 11, issue 3, p. 221.

September 22, 2020 (v3) Lesson Open Access View

### Аналіз супутникових знімків у геоінформаційних системах. Платформа Giovanni (NASA)

Laboratory "Geoinformation System and Remote Sensing";

Реєстрація на платформі Giovanni (NASA), практична робота та презентація Результати практичної надсилайте на пошту лабораторії gis\_rs@man.gov.ua

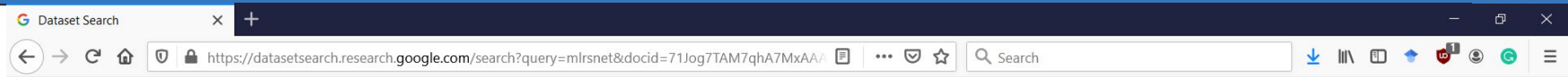
Uploaded on September 29, 2020

2 more version(s) exist for this record

September 22, 2020 (v1) Presentation Open Access View

### Платформа Giovanni (NASA)

Laboratory "Geoinformation System and Remote Sensing";



mlrsnet



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Topic

Free

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2 datasets found



Data from: MLRSNet: A Multi-label High Spatial Resolution Remote Sensing...

data.mendeley.com

Updated Jul 13, 2020



MLRSNet: A Multilabel High Spatial Resolution Remote Sensing Dataset for...

data.mendeley.com

Updated Jul 2, 2020



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## Data from: MLRSNet: A Multi-label High Spatial Resolution Remote Sensing Dataset for Semantic Scene Understanding

Related Article

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Unique identifier

<https://doi.org/10.17632/7j9bv9vwsx.2>

Dataset updated Jul 13, 2020

Dataset provided by

Mendeley Data

Authors

Xiaoman Qi

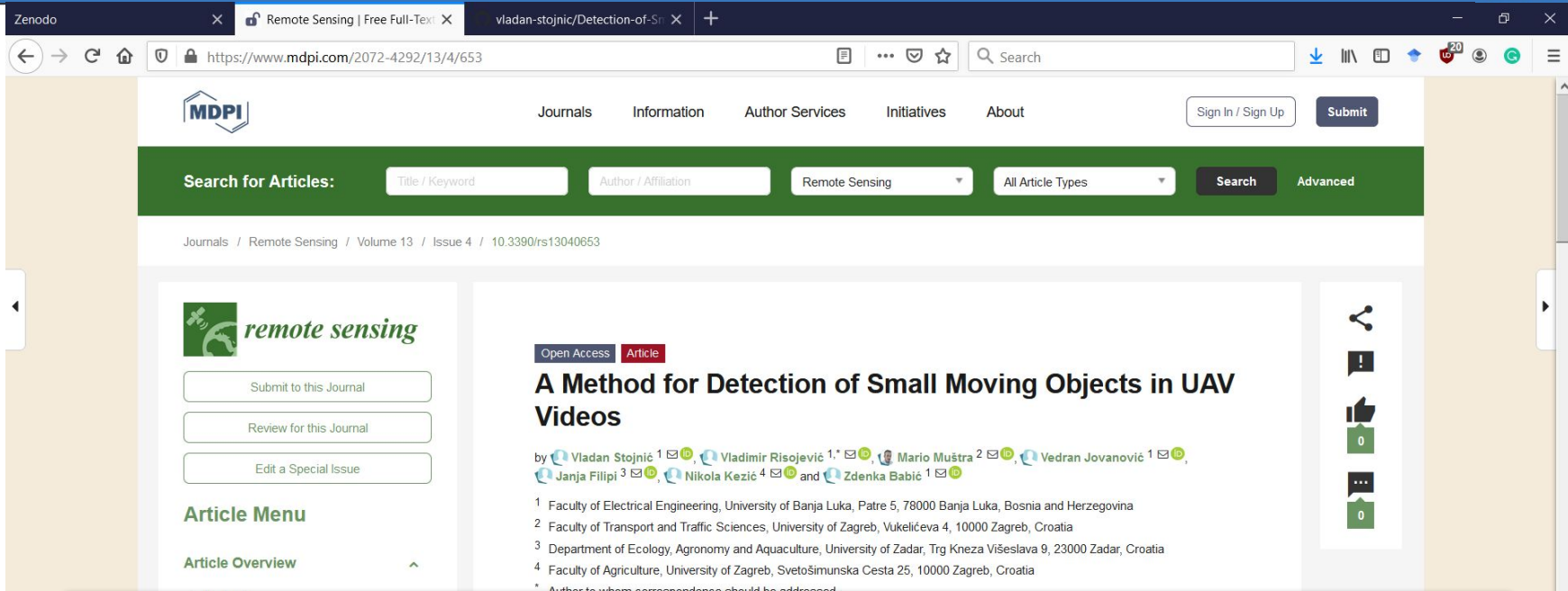
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Description

MLRSNet provides different perspectives of the world captured from satellites. That is, it is composed of high spatial resolution optical satellite images. MLRSNet



The screenshot shows a web browser window with the MDPI website. The address bar displays the URL: <https://www.mdpi.com/2072-4292/13/4/653>. The page header includes the MDPI logo and navigation links: Journals, Information, Author Services, Initiatives, About, Sign In / Sign Up, and Submit. A search bar is present with the text "Search for Articles:" and filters for "Title / Keyword", "Author / Affiliation", "Remote Sensing", and "All Article Types". The main content area shows the journal "remote sensing" and the article "A Method for Detection of Small Moving Objects in UAV Videos" by Vladan Stojnić, Vladimir Risojević, Mario Muštra, Vedran Jovanović, Janja Filipi, Nikola Kezić, and Zdenka Babić. The article is marked as "Open Access" and "Article".

## Data Availability Statement

The data presented in this study are openly available in Zenodo at <https://doi.org/10.5281/zenodo.4400650>. The code used for the experiments is openly available at <https://github.com/vladan-stojnic/Detection-of-Small-Flying-Objects-in-UAV-Videos>.










BEE4EXP | Zenodo

https://zenodo.org/record/4400651

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December 30, 2020 Dataset Open Access Edit New version

## BEE4EXP

 Stojnić, Vladan;  Risojević, Vladimir;  Muštra, Mario;  Jovanović, Vedran;  Filipi, Janja;  Kezić, Nikola;  Babić, Zdenka

Supplementary data for paper:

Vladan Stojnić, Vladimir Risojević, Mario Muštra, Vedran Jovanović, Janja Filipi, NikolaKezić, and Zdenka Babić, "Detection of Flying Honeybees in UAV Videos", submitted to Remote Sensing.

Background sequences for generation of synthetic training videos:

- background\_seq1.mp4
- background\_seq2.mp4
- background\_seq3.mp4.


Test videos for flying honeybee detection:

- test\_seq1.mp4
- test\_seq2.mp4
- test\_seq3.mp4.

Ground truth honeybee detections for test videos:

- test\_seq1.npy
- test\_seq2.npy
- test\_seq3.npy

45 views 30 downloads [See more details...](#)

Indexed in 

**Publication date:**  
December 30, 2020

**DOI:**  
DOI [10.5281/zenodo.4400651](https://doi.org/10.5281/zenodo.4400651)

**Keyword(s):**  
Small Object Detection Synthetic Videos  
Convolutional Neural Networks UAVs Honeybees

**License (for files):**

Files (75.1 MB)

Name	Size
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Zenodo Remote Sensing | Free Full-Text vladan-stojnic/Detection-of-Sm... +

https://github.com/vladan-stojnic/Detection-of-Small-Flying-Objects-in-UAV-Videos

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vladan-stojnic / Detection-of-Small-Flying-Objects-in-UAV-Videos

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main 1 branch 0 tags

Go to file Add file Code

vladan-stojnic	Citation	85ba903 14 days ago	11 commits
models	Changed model names.		2 months ago
.gitignore	Documentations for most of the code.		2 months ago
README.md	Citation		14 days ago
add_bees_to_video.py	Documentations for most of the code.		2 months ago
annotate.py	Documentations for most of the code.		2 months ago
bee4exp.yml	Documentations for most of the code.		2 months ago
bgsub.py	Documentations for most of the code.		2 months ago
chunked_dataset.py	Documentations for most of the code.		2 months ago
cut_video_into_blocks.py	Documentations for most of the code.		2 months ago
detection.py	Completed documentation.		2 months ago
generator.py	Documentations for most of the code.		2 months ago
nets.py	Documentations for most of the code.		2 months ago

## About

Code for paper "Detection of Flying Honeybees in UAV Videos"

tensorflow keras dataset  
object-detection keras-tensorflow  
moving-object-detection  
small-object-detection uav-videos  
synthetic-honeybees flying-objects

Readme

## Releases

No releases published

## Packages

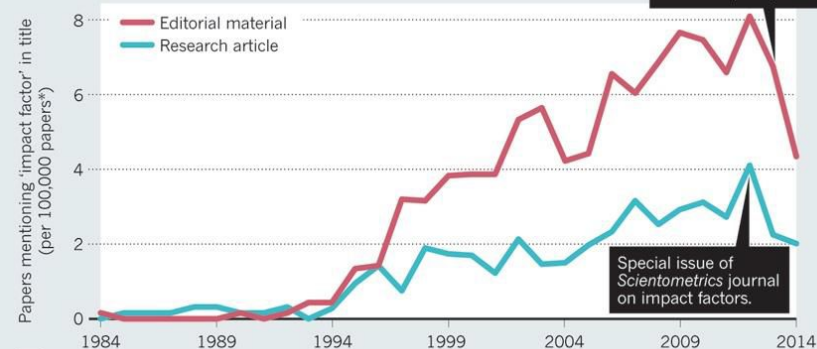
No packages published

- ❑ Evaluacija istraživanja se svodi na mjerenje – kvantitativna evaluacija
- ❑ Neophodna je i kvalitativna evaluacija
- ❑ Lajdenski manifest o vrednovanju istraživanja
  - ❑ [http://www.leidenmanifesto.org/uploads/4/1/6/0/41603901/lajdenski\\_manifest\\_serbian.pdf](http://www.leidenmanifesto.org/uploads/4/1/6/0/41603901/lajdenski_manifest_serbian.pdf)
- ❑ The Declaration on Research Assessment (DORA)
  - ❑ <https://sfdora.org/read/read-the-declaration-serbian/>

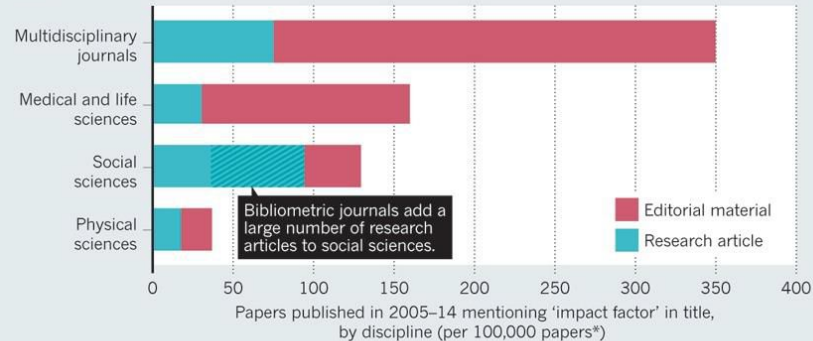
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Soaring interest in one crude measure — the average citation counts of items published in a journal in the past two years — illustrates the crisis in research evaluation.

### 1 ARTICLES MENTIONING 'IMPACT FACTOR' IN TITLE



### 2 WHO IS MOST OBSESSED?

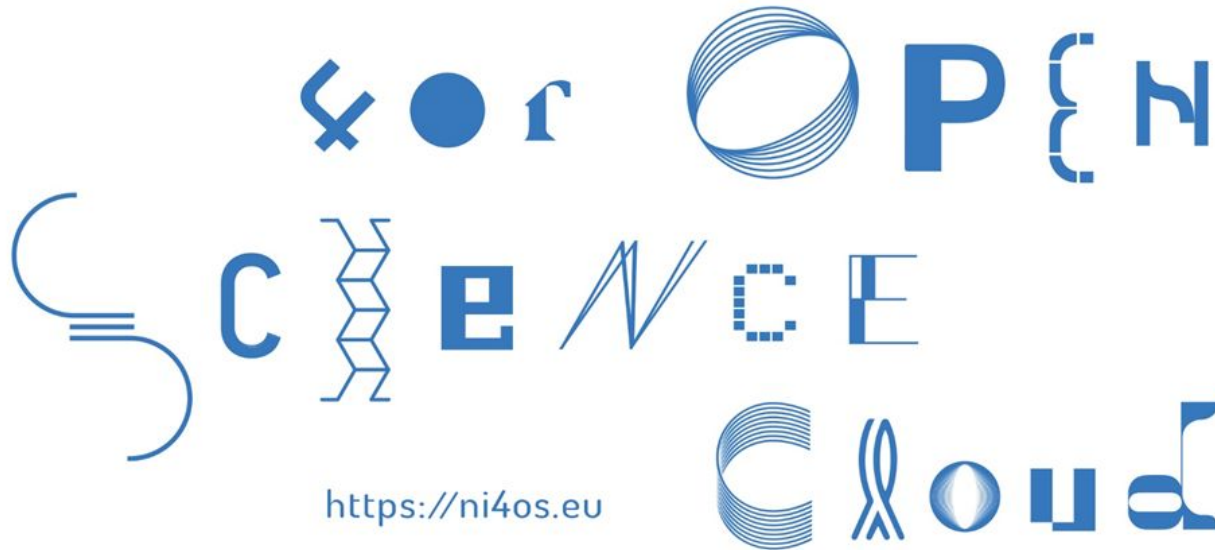


\*Indexed in the Web of Science. †DORA, San Francisco Declaration on Research Assessment.



- ❑ Otvoren pristup naučnim radovima povećava njihov uticaj
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  - ❑ Otvoreni podaci
    - ❑ Reprodukција rezultata
    - ❑ Nove analize
    - ❑ Razvoj novih proizvoda
  - ❑ Slobodan i softver otvorenog koda
    - ❑ Reprodukција rezultata
    - ❑ Lakša analiza podataka
    - ❑ Skraćeno vrijeme razvoja novih proizvoda
  - ❑ Razvoj infrastrukture
  - ❑ Prihvatanje novih metrika za evaluaciju naučnog rada
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# Hvala!



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