

RS2C

Remote Sensing Scene Classification

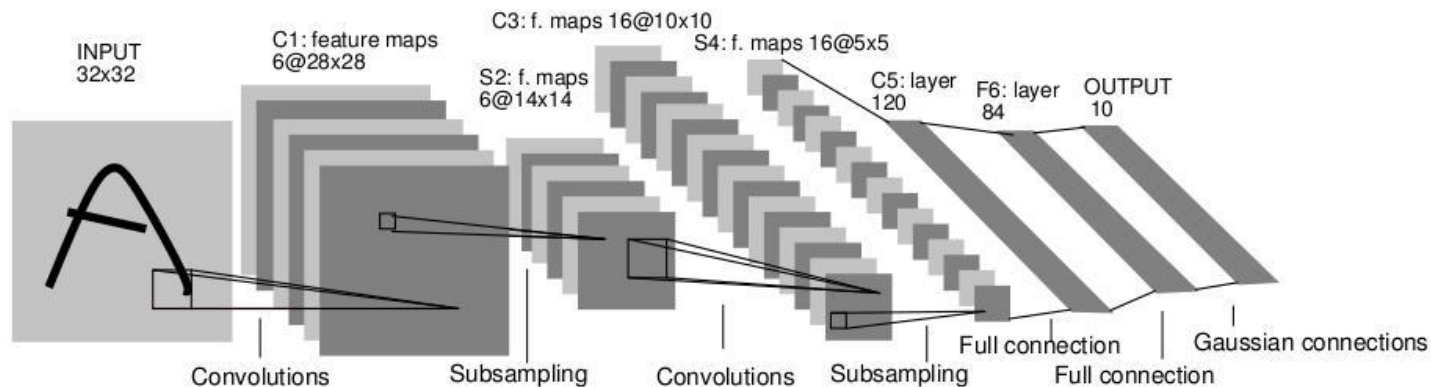
Vladimir Risojević

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- Veb servis i aplikacija za klasifikaciju slika dobijenih daljinskom detekcijom
 - Klasifikacija čitave slike, 46 kategorija scena
 - Označavanje slika sa više labela (tagovanje), 60 labela
 - Aplikacija: <http://rs2c.etfbl.net>
 - Dokumenti:
https://catalogue.ni4os.eu/?_=/resources/e1aa80eb-44c0-4c43-89d9-58c297d5dd80
- Primjene:
 - Klasifikacija pokrivača i načina korištenja zemljišta,
 - Praćenje urbanog rasta,
Praćenje i predviđanje klimatskih promjena,
 - Nadzor ekosistema, ...

- 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 and titles for recent submissions

- [Fri, 26 Feb 2021](#)
- [Thu, 25 Feb 2021](#)
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- [Tue, 23 Feb 2021](#)
- [Mon, 22 Feb 2021](#)

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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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master 40 branches 133 tags

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chsigg and tensorflower-gardener Use mlir::OpState::operator->() to get to ... de3a18f 2 hours ago 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 llvm/llvm-project@5077d42	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

risojevic/NI4OS-RSSC: NI4OS | X

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

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risojevic 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

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Packages

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Contributors 2

- risojevic

- ❑ 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

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

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.

[Download All \(1254 MB\)](#)

Files

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Citations

Dataset metrics

Usage

Views: 385
Downloads: 212



[View details >](#)

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"

- Servis je uključen u NI4OS katalog servisa
 - <http://catalogue.ni4os.eu>
 - Metadata
- HTTP access/Docker container
 - Terms of use
- RESTful API
 - Accepts HTTP POST requests
 - Returns JSON objects
- Based on open source tools and libraries
- MIT License

1. V. Stojnić, V. Risojević, M. Muštra, V. Jovanović, J. Filipi, N. Kezić, Z. Babić, A Method for Detection of Small Moving Objects in UAV Videos, *Remote Sensing*, Vol. 13, No. 653, Jan, 2021.
2. V. Stojnić, V. Risojević, "Self-Supervised Learning of Remote Sensing Scene Representations Using Contrastive Multiview Coding", *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*, pp. 1182-1191, Jun. 2021.
3. V. Risojević, V. Stojnić, "Do We Still Need ImageNet Pre-training in Remote Sensing Scene Classification", accepted *ISPRS Congress*, Jun. 2022.

- Horizon 2020 European research infrastructures grant agreement no. 857645, National Initiatives for Open Science in Europe (NI4OS-Europe) project
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Šta NI4OS još može da učini za nas?

- Prijava na NI4OS otvoreni poziv
- Pristup računarskoj infrastrukturi
 - NVIDIA V100 GPU
- Možemo brže obučavati veće modele
- Drugi servisi su takođe dostupni



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