ISIC CHALLENGE

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## ISIC Challenge Datasets

### 2016

| Task | Training Data | Training Ground Truth | Test Data | Test Ground Truth | License |
|---|---|---|---|---|---|
| 1 | Download (602MB)<br>900 dermoscopic lesion images in JPEG format, with EXIF data stripped. | Download (6MB)<br>900 binary mask images in PNG format. | Download (232MB)<br>379 images of the exact same format as the Training Data. | Download (2MB) | CC-0 |
| 2 | Download (671MB)<br>807 lesion images in JPEG format and 807 corresponding superpixel masks in PNG format, with EXIF data stripped. | Download (5MB)<br>807 dermoscopic feature files in JSON format. | Download (257MB)<br>335 lesion images and 335 corresponding superpixel masks of the exact same formats as the Training Data. | Download (2MB) | |
| 2B | Download (565MB)<br>807 lesion images in JPEG format, with EXIF data stripped. | Download (5MB)<br>1614 binary mask images in PNG format. | Download (216MB)<br>335 lesion images of the exact same formats as the Training Data. | Download (2MB) | |
| 3 | Download (602MB)<br>900 dermoscopic lesion images in JPEG format. | Download (19KB)<br>900 entries of gold standard malignant status. | Download (232MB)<br>379 images of the exact same format as the Training Data. | Download (7KB) | |

| Task | Training Data | Training Ground Truth | Test Data | Test Ground Truth | License |
|---|---|---|---|---|---|
| 3B | Download (608MB) 900 dermoscopic lesion images in JPEG format and 900 associated segmentation binary masks in PNG format. | Download (19KB) 900 entries of gold standard malignant status. | Download (234MB) 379 images and 379 associated segmentation masks, of the exact same format as the Training Data. | Download (7KB) | |

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## Citing 2016 datasets:

> Gutman, David; Codella, Noel C. F.; Celebi, Emre; Helba, Brian; Marchetti, Michael; Mishra, Nabin; Halpern, Allan. "Skin Lesion Analysis toward Melanoma Detection: A Challenge at the International Symposium on Biomedical Imaging (ISBI) 2016, hosted by the International Skin Imaging Collaboration (ISIC)". eprint arXiv:1605.01397. 2016.

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# 2017

| Task | Training Data | Training Ground Truth | Validation Data | Validation Ground Truth | Test Data | Test Ground Truth | License |
|---|---|---|---|---|---|---|---|
| 1 | Download (5.8GB) 2000 lesion images in JPEG format and 2000 corresponding superpixel masks in PNG format, with EXIF data stripped. | Download (9MB) 2000 binary mask images in PNG format. | Download (878MB) | Download (559KB) | Download (5.4GB) | Download (18MB) | CC-0 |
| 2 | | Download (710KB) 2000 dermoscopic feature files in JSON format. | | Download (51KB) | | Download (210KB) | |
| 3 | | Download (43KB) 2000 entries of gold standard lesion diagnoses. | | Download (3KB) | | Download (13KB) | |

## Citing 2017 datasets:

> Codella N, Gutman D, Celebi ME, Helba B, Marchetti MA, Dusza S, Kalloo A, Liopyris K, Mishra N, Kittler H, Halpern A. "Skin Lesion Analysis Toward Melanoma Detection: A Challenge at the 2017 International Symposium on Biomedical Imaging (ISBI), Hosted by the International Skin Imaging Collaboration (ISIC)". arXiv: 1710.05006 [cs.CV]

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# 2018

| Task | Training Data | Training Ground Truth | Validation Data | Validation Ground Truth | Test Data | Test Ground Truth | License |
|---|---|---|---|---|---|---|---|
| 1 | Download (10.4GB) 2594 images and 12970 corresponding ground truth response masks (5 for each image). | Download (26MB) | Download (228MB) | Download (742KB) | Download (2.2GB) 1000 images. | Not Available | CC-0 |
| 2 | | Download (33MB) | | Download (1MB) | | Not Available | |
| 3 | Download (2.6GB) 10015 images and 1 ground truth response CSV file (containing 1 header row and 10015 corresponding response rows).<br>Download (481KB) 10015 entries grouping each lesion by image and diagnosis confirm type. | Download (36KB) | Download (51MB) | Download (7KB) | Download (401MB) 1512 images. | Not Available | CC-BY-NC |

## Citing 2018 datasets:

> [1] Noel Codella, Veronica Rotemberg, Philipp Tschandl, M. Emre Celebi, Stephen Dusza, David Gutman, Brian Helba, Aadi Kalloo, Konstantinos Liopyris, Michael Marchetti, Harald Kittler, Allan Halpern: "Skin Lesion Analysis Toward Melanoma Detection 2018: A Challenge Hosted by the International Skin Imaging Collaboration (ISIC)", 2018; https://arxiv.org/abs/1902.03368
>
> [2] Tschandl, P., Rosendahl, C. & Kittler, H. The HAM10000 dataset, a large collection of multi-source dermatoscopic images of common pigmented skin lesions. Sci. Data 5, 180161 doi:10.1038/sdata.2018.161 (2018).

# 2019

| Task | Training Data | Training Ground Truth | Test Data | Test Ground Truth | License |
|---|---|---|---|---|---|
| 1 | Download (9.1GB)<br>25,331 JPEG images of skin lesions. | Download (1MB)<br>25,331 entries of gold standard lesion diagnoses. | Download (3.6GB)<br>8,238 JPEG images of skin lesions. | Not Available | CC-BY-NC |
| 2 | Download (1MB)<br>25,331 metadata entries of age, sex, general anatomic site, and common lesion identifier. | | Download (287KB)<br>8,238 metadata entries of age, sex, and general anatomic site. | Not Available | |

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## Citing 2019 datasets:

To comply with the attribution requirements of the CC-BY-NC license , the aggregate "ISIC 2019: Training" data must be cited as:

> BCN_20000 Dataset: (c) Department of Dermatology, Hospital Clínic de Barcelona
>
> HAM10000 Dataset: (c) by ViDIR Group, Department of Dermatology, Medical University of Vienna; https://doi.org/10.1038/sdata.2018.161
>
> MSK Dataset: (c) Anonymous; https://arxiv.org/abs/1710.05006 ; https://arxiv.org/abs/1902.03368

When referencing this dataset in your own manuscripts and publications, please use the following full citations:

> [1] Tschandl P., Rosendahl C. & Kittler H. The HAM10000 dataset, a large collection of multi-source dermatoscopic images of common pigmented skin lesions. Sci. Data 5, 180161 doi.10.1038/sdata.2018.161 (2018)
>
> [2] Noel C. F. Codella, David Gutman, M. Emre Celebi, Brian Helba, Michael A. Marchetti, Stephen W. Dusza, Aadi Kalloo, Konstantinos Liopyris, Nabin Mishra, Harald Kittler, Allan Halpern: "Skin Lesion Analysis Toward Melanoma Detection: A Challenge at the 2017 International Symposium on Biomedical Imaging (ISBI), Hosted by the International Skin Imaging Collaboration (ISIC)", 2017; arXiv:1710.05006.
>
> [3] Marc Combalia, Noel C. F. Codella, Veronica Rotemberg, Brian Helba, Veronica Vilaplana, Ofer Reiter, Allan C. Halpern, Susana Puig, Josep Malvehy: "BCN20000: Dermoscopic Lesions in the Wild", 2019; arXiv:1908.02288.

# 2020

| Training Data | Training Ground Truth | Test Data | Test Ground Truth | License |
|---|---|---|---|---|
| Download DICOM (48.9GB)<br>33,126 DICOM images with embedded metadata.<br><br>Download DICOM Corrected* (23.0GB)<br>33,126 DICOM images with embedded metadata.<br><br>Download JPEG (23GB)<br>33,126 JPEG images.<br><br>Download metadata (2MB)<br>33,126 metadata entries of patient ID, sex, age, and general anatomic site.<br><br>Download metadata v2 (2MB)<br>33,126 metadata entries of patient ID, lesion ID, sex, age, and general anatomic site.<br><br>Download duplicate image list (2MB)<br>List of 425 duplicate images. | Download (2MB)<br>33,126 entries of gold standard lesion diagnoses. | Download DICOM (15.3GB)<br>10,982 DICOM images with embedded metadata.<br><br>Download DICOM Corrected* (6.7GB)<br>10,982 DICOM images with embedded metadata.<br><br>Download JPEG (6.7GB)<br>10,982 JPEG images.<br><br>Download metadata (458KB)<br>10,982 metadata entries of patient ID, sex, age, and general anatomic site. | Not Available | CC-BY-NC |

*The newer version of the DICOM files are provided to avoid potential errors stemming from readers implementing a strict DICOM verification, as implemented in http://dclunie.com/dicom3tools/dciodvfy.html.

## Citing 2020 datasets:

To comply with the attribution requirements of the CC-BY-NC license , the aggregate "ISIC 2020" data must be cited as:

> International Skin Imaging Collaboration. SIIM-ISIC 2020 Challenge Dataset. *International Skin Imaging Collaboration* https://doi.org/10.34970/2020-ds01 (2020).
>
> Creative Commons Attribution-Non Commercial 4.0 International License.
>
> The dataset was generated by the International Skin Imaging Collaboration (ISIC) and images are from the following sources: Hospital Clínic de Barcelona, Medical University of Vienna, Memorial Sloan Kettering Cancer Center, Melanoma Institute Australia, The University of Queensland, and the University of Athens Medical School.
>
> You should have received a copy of the license along with this work.

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> If not, see https://creativecommons.org/licenses/by-nc/4.0/legalcode.txt .

When referencing this dataset in your own manuscripts and publications, please use the following full citation. Please note this is a preprint and has not undergone peer review. It is being prepared for submission and if accepted to a peer reviewed journal the below will be updated accordingly:

> [1] Rotemberg, V., Kurtansky, N., Betz-Stablein, B., Caffery, L., Chousakos, E., Codella, N., Combalia, M., Dusza, S., Guitera, P., Gutman, D., Halpern, A., Helba, B., Kittler, H., Kose, K., Langer, S., Lioprys, K., Malvehy, J., Musthaq, S., Nanda, J., Reiter, O., Shih, G., Stratigos, A., Tschandl, P., Weber, J. & Soyer, P. A patient-centric dataset of images and metadata for identifying melanomas using clinical context. Sci Data 8, 34 (2021). https://doi.org/10.1038/s41597-021-00815-z

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