

# **Fitzpatrick 17k dataset team**

Matthew Groh, Caleb Harris, Luis Soenksen, Felix Lau,  
Rachel Han, Aerin Kim, Arash Koochek, Omar Badri

**Open Data**  
**@ MIT**

## **Evaluating Deep Neural Networks Trained on Clinical Images in Dermatology with the Fitzpatrick 17k Dataset**

**Matthew Groh**  
MIT Media Lab  
Cambridge, MA  
groh@mit.edu

**Caleb Harris**  
MIT Media Lab  
Cambridge, MA  
harrisc@mit.edu

**Luis Soenksen**  
MIT, Harvard University  
Cambridge, MA  
soenksen@mit.edu

**Felix Lau**  
Scale  
San Francisco, CA  
felix.lau@scale.com

**Rachel Han**  
Scale  
San Francisco, CA  
rachel.han@scale.com

**Aerin Kim**  
Scale  
San Francisco, CA  
aerin.kim@scale.com

**Arash Koochek**  
Banner Health  
Phoenix, AZ  
arash.koochek@bannerhealth.com

**Omar Badri**  
Northeast Dermatology Associates  
Beverly, MA  
obadri@gmail.com

# *Dermatology Has a Problem With Skin Color*

Common conditions often manifest differently on dark skin. Yet physicians are trained mostly to diagnose them on white skin.

in f CONtribute

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HEALTH

## Dermatology faces a reckoning: Lack of darker skin in textbooks and journals harms care for patients of color



By [Usha Lee McFarling](#) July 21, 2020

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# Lack of Publicly Available Dermatology Images Datasets with Skin Type Labels

Derm 7 pt ✘

Dermofit Image Library ✘

ISIC 2018, ISIC 2019, ISIC 2020 ✘

MED-NODE ✘

PH2 ✘

SD-128, SD-198, SD-260 ✘

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PAD-UFES-20 ✓ (579/1,373 patients have data on Fitzpatrick skin type)

# Fitzpatrick 17k

16,577 clinical images labeled with skin conditions and Fitzpatrick skin types

12,672 images from DermaAmin and 3,905 images from Atlas Dermatologico

	A	B	C	D	E	F	G
1	md5hsh	fitzpatrick	label	nine_partition_label	three_partition_label	qc	url
2	5e82a45bc5d78bd24ae9202d194423f8	3	drug induced pigmentary changes	inflammatory	non-neoplastic		<a href="https://www.dermaamin.com/site/images/clinical-pic/m/minocycline-pigmentation/minocycline-pigmentation1.jpg">https://www.dermaamin.com/site/images/clinical-pic/m/minocycline-pigmentation/minocycline-pigmentation1.jpg</a>
3	fa2911a9b13b6f8af79cb700937cc14f	1	photodermatoses	inflammatory	non-neoplastic		<a href="https://www.dermaamin.com/site/images/clinical-pic/p/photosensitivity/photosensitivity18.jpg">https://www.dermaamin.com/site/images/clinical-pic/p/photosensitivity/photosensitivity18.jpg</a>
4	d2bac3c9e4499032ca8e9b07c7d3bc40	2	dermatofibroma	benign dermal	benign		<a href="https://www.dermaamin.com/site/images/clinical-pic/d/dermatofibroma/dermatofibroma71.jpg">https://www.dermaamin.com/site/images/clinical-pic/d/dermatofibroma/dermatofibroma71.jpg</a>
5	0a94359e7eaacd7178e06b2823777789	1	psoriasis	inflammatory	non-neoplastic		<a href="https://www.dermaamin.com/site/images/clinical-pic/p/psoriasis/psoriasis38.jpg">https://www.dermaamin.com/site/images/clinical-pic/p/psoriasis/psoriasis38.jpg</a>
6	a39ec3b1f22					tic	<a href="https://www.dermaamin.com/site/images/clinical-pic/p/psoriasis-scalp/psoriasis-scalp20.jpg">https://www.dermaamin.com/site/images/clinical-pic/p/psoriasis-scalp/psoriasis-scalp20.jpg</a>
7	45f7fe0e102:						<a href="https://www.dermaamin.com/site/images/clinical-pic/k/kaposi-sarcoma/kaposi-sarcoma4.jpg">https://www.dermaamin.com/site/images/clinical-pic/k/kaposi-sarcoma/kaposi-sarcoma4.jpg</a>
8	6c395be9325					tic	<a href="https://www.dermaamin.com/site/images/clinical-pic/s/sweet-syndrome/sweet-syndrome98.jpg">https://www.dermaamin.com/site/images/clinical-pic/s/sweet-syndrome/sweet-syndrome98.jpg</a>
9	9dc73230c77					tic	<a href="https://www.dermaamin.com/site/images/clinical-pic/g/granuloma_annulare/granuloma_annulare41.jpg">https://www.dermaamin.com/site/images/clinical-pic/g/granuloma_annulare/granuloma_annulare41.jpg</a>
10	f23937e86de					tic	<a href="https://www.dermaamin.com/site/images/clinical-pic/l/larva-migrans/larva-migrans88.jpg">https://www.dermaamin.com/site/images/clinical-pic/l/larva-migrans/larva-migrans88.jpg</a>
11	09d46db9585					tic	<a href="https://www.dermaamin.com/site/images/clinical-pic/a/allergic_contact_dermatitis/allergic_contact_dermatitis114.jpg">https://www.dermaamin.com/site/images/clinical-pic/a/allergic_contact_dermatitis/allergic_contact_dermatitis114.jpg</a>
12	9bc21ae9502					tic	<a href="https://www.dermaamin.com/site/images/clinical-pic/n/necrobiosis_lipoidica-diabeticorum/necrobiosis-lipoidica-diabeticorum88.jpg">https://www.dermaamin.com/site/images/clinical-pic/n/necrobiosis_lipoidica-diabeticorum/necrobiosis-lipoidica-diabeticorum88.jpg</a>
13	e702b1a7dc4					tic	<a href="https://www.dermaamin.com/site/images/clinical-pic/s/sweet-syndrome/sweet-syndrome50.jpg">https://www.dermaamin.com/site/images/clinical-pic/s/sweet-syndrome/sweet-syndrome50.jpg</a>
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16	d1fb87ee7ee					tic	<a href="https://www.dermaamin.com/site/images/clinical-pic/a/acne_vulgaris/acne_vulgaris150.jpg">https://www.dermaamin.com/site/images/clinical-pic/a/acne_vulgaris/acne_vulgaris150.jpg</a>
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18	2d57e08861t					tic	<a href="https://www.dermaamin.com/site/images/clinical-pic/s/sarcoidosis-of-the-skin-plaque-form/sarcoidosis-of-the-skin-plaque-form15.jpg">https://www.dermaamin.com/site/images/clinical-pic/s/sarcoidosis-of-the-skin-plaque-form/sarcoidosis-of-the-skin-plaque-form15.jpg</a>
19	1e119546f5b					tic	<a href="https://www.dermaamin.com/site/images/clinical-pic/x/xeroderma-pigmentosum/xeroderma-pigmentosum13.jpg">https://www.dermaamin.com/site/images/clinical-pic/x/xeroderma-pigmentosum/xeroderma-pigmentosum13.jpg</a>
20	4c3f795cf8et						<a href="https://www.dermaamin.com/site/images/clinical-pic/m/melanoma/melanoma17.jpg">https://www.dermaamin.com/site/images/clinical-pic/m/melanoma/melanoma17.jpg</a>
21	99247c9fe48						<a href="https://www.dermaamin.com/site/images/clinical-pic/d/dermatofibroma/dermatofibroma13.jpg">https://www.dermaamin.com/site/images/clinical-pic/d/dermatofibroma/dermatofibroma13.jpg</a>
22	b09233673fc						<a href="https://www.dermaamin.com/site/images/clinical-pic/a/actinic_keratoses/actinic_keratoses83.jpg">https://www.dermaamin.com/site/images/clinical-pic/a/actinic_keratoses/actinic_keratoses83.jpg</a>
23	449d63bec3a					tic	<a href="https://www.dermaamin.com/site/images/clinical-pic/L/localized-scleroderma/localized-scleroderma3.jpg">https://www.dermaamin.com/site/images/clinical-pic/L/localized-scleroderma/localized-scleroderma3.jpg</a>
24	7a06b6baf51					tic	<a href="https://www.dermaamin.com/site/images/clinical-pic/h/hidradenitis_suppurativa/hidradenitis_suppurativa18.jpg">https://www.dermaamin.com/site/images/clinical-pic/h/hidradenitis_suppurativa/hidradenitis_suppurativa18.jpg</a>
25	fb9640a13e0						<a href="https://www.dermaamin.com/site/images/clinical-pic/s/syringoma/syringoma33.jpg">https://www.dermaamin.com/site/images/clinical-pic/s/syringoma/syringoma33.jpg</a>



# Enabling Future Research

- Enables algorithmic audits and explores selection bias in training datasets and algorithmic bias in models
- 114 researchers have requested to download the dataset since June 2021
- Cited in 20+ articles including articles in Science Advances, Nature Communications, NPJ Digital Medicine, JAMA Dermatology, International Conference on Machine Learning, and elsewhere

