



# A Search for the Heart

Digital collections, machine learning and legacies of care

BY JER THORP & JONATHAN ASHLEY FOR LC LABS

IT'S JANUARY 6TH IN GUANICA, PUERTO RICO.

THREE KING'S EVE.

TOMORROW THERE WILL BE PARADES AND FESTIVALS, BUT TONIGHT THERE IS FOOD AND DRINK AND MUSIC.

INSIDE THIS TINY FARMERS HOME THE PLAYING HAS BEEN GOING FOR HOURS. THE AIR SMELLS OF RIPE FRUIT, WARM BODIES AND TOBACCO.

THIS IS  
JACK DELANO.



HERE'S JACK AGAIN THAT SAME NIGHT, AT A VERY DIFFERENT PARTY, WITH A VERY DIFFERENT GROUP OF PUERTO RICANS.

THE SUITS ARE TAILORED,  
THE SHOES ARE SHINED.

THE PARENTS ARE SMOKING  
AMERICAN CIGARETTES.

JACK DIDN'T EXPECT TO BE IN PUERTO RICO. BUT HE'S DETERMINED TO MAKE THE BEST OUT OF IT BY DOING WHAT HE KNOWS:

TELLING THE STORIES OF PEOPLES' LIVES THROUGH HIS LENS.

IN THE TWO YEARS BEFORE JACK ARRIVED IN PUERTO RICO HE HAS PHOTOGRAPHED PEOPLE FROM ALL WALKS OF LIFE...



CHILDREN WORKING ON TOBACCO PLANTATIONS IN CONNECTICUT...



SHIP BUILDERS ON BREAK IN MAINE.



BOOTLEG COAL MINERS IN PENNSYLVANIA...





OVER THE WINTER OF 1941, JACK TOOK A CROSS-COUNTRY JOURNEY, PHOTOGRAPHING RAIL YARDS AND WORKERS.

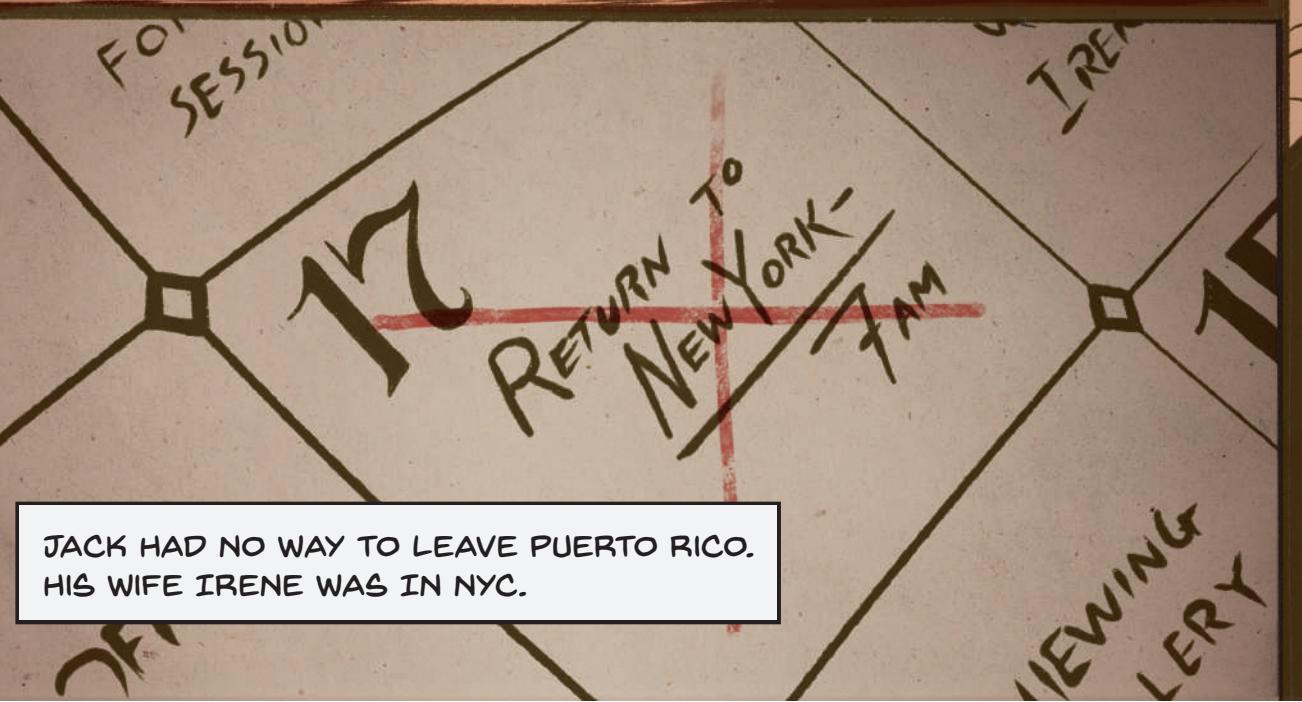


THIS WAS THE START OF YEARS-LONG PROJECT THAT WOULD RESULT IN SOME OF THE MOST ICONIC AND IMPORTANT IMAGES OF THE ERA.

IN DECEMBER, 1941, JACK HAD BEEN HEADING TO THE U.S. VIRGIN ISLANDS ON ASSIGNMENT...



AT THE EXACT MOMENT PRE-WAR AMERICA CEASED TO EXIST.



JACK HAD NO WAY TO LEAVE PUERTO RICO. HIS WIFE IRENE WAS IN NYC.

A FEW DAYS BECAME A WEEK.

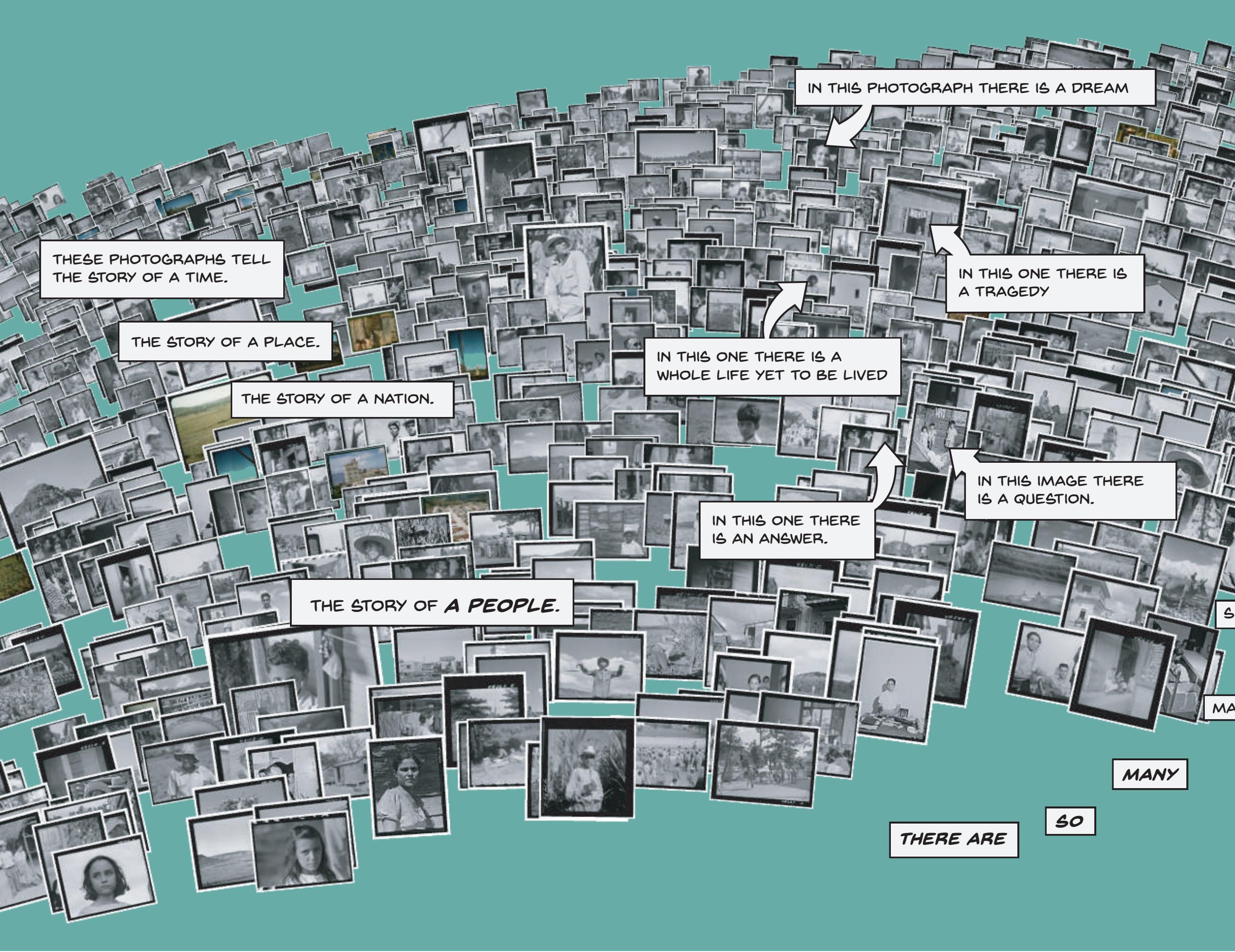


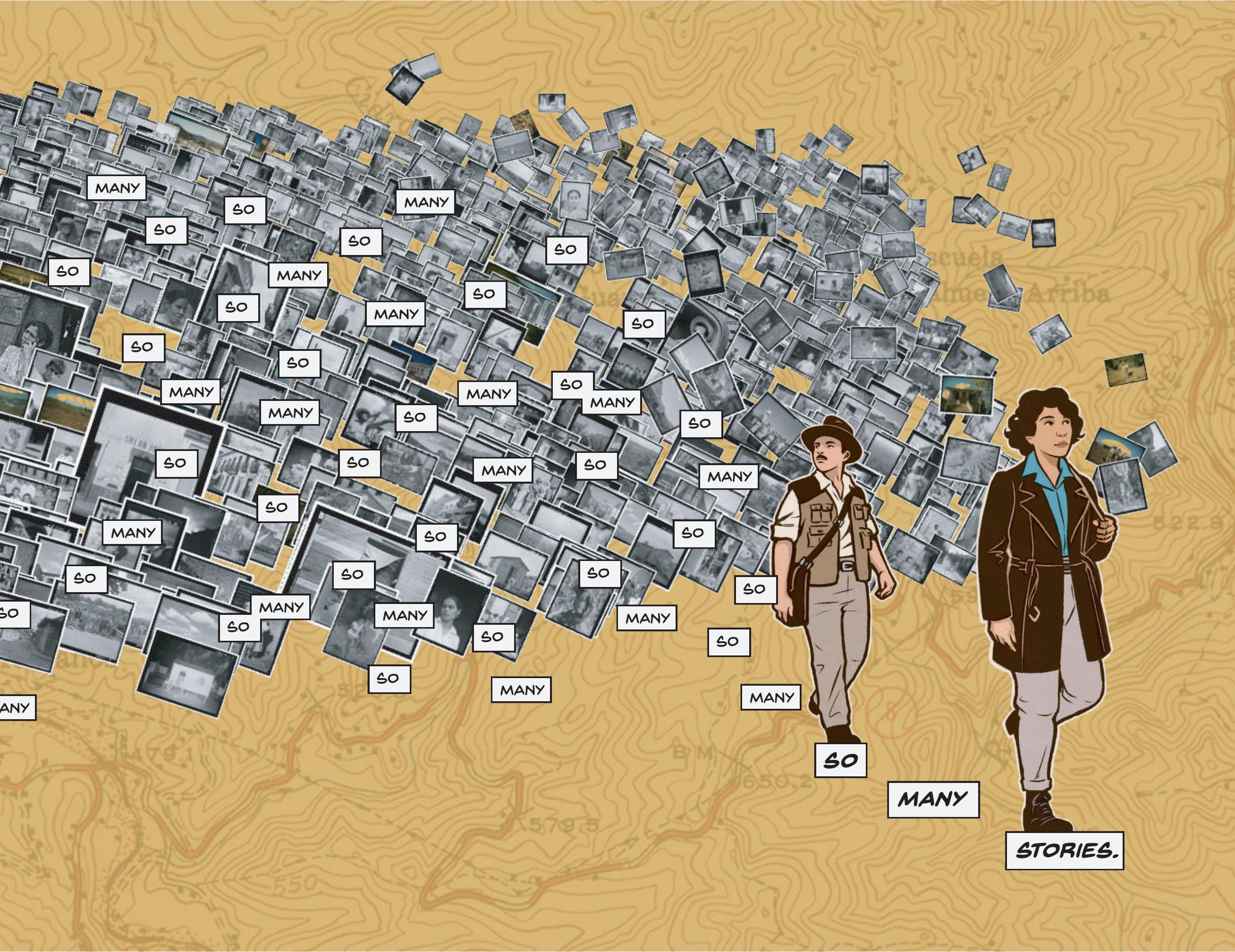
IRENE, NOT THE TYPE TO WAIT, SMUGGLED HERSELF INTO PUERTO RICO ON AN OCEAN LINER.

FROM THEN ON THEY WERE A TEAM.

OVER THE NEXT THREE MONTHS THE DELANOS WILL VISIT EVERY PART OF THE SMALL CARIBBEAN ISLAND NATION

JACK WILL SHOOT MORE THAN 2,000 PHOTOGRAPHS.





MANY

SO

MANY

SO

MANY

SO

SO

SO

MANY

MANY

SO

MANY

SO

MANY

SO

MANY

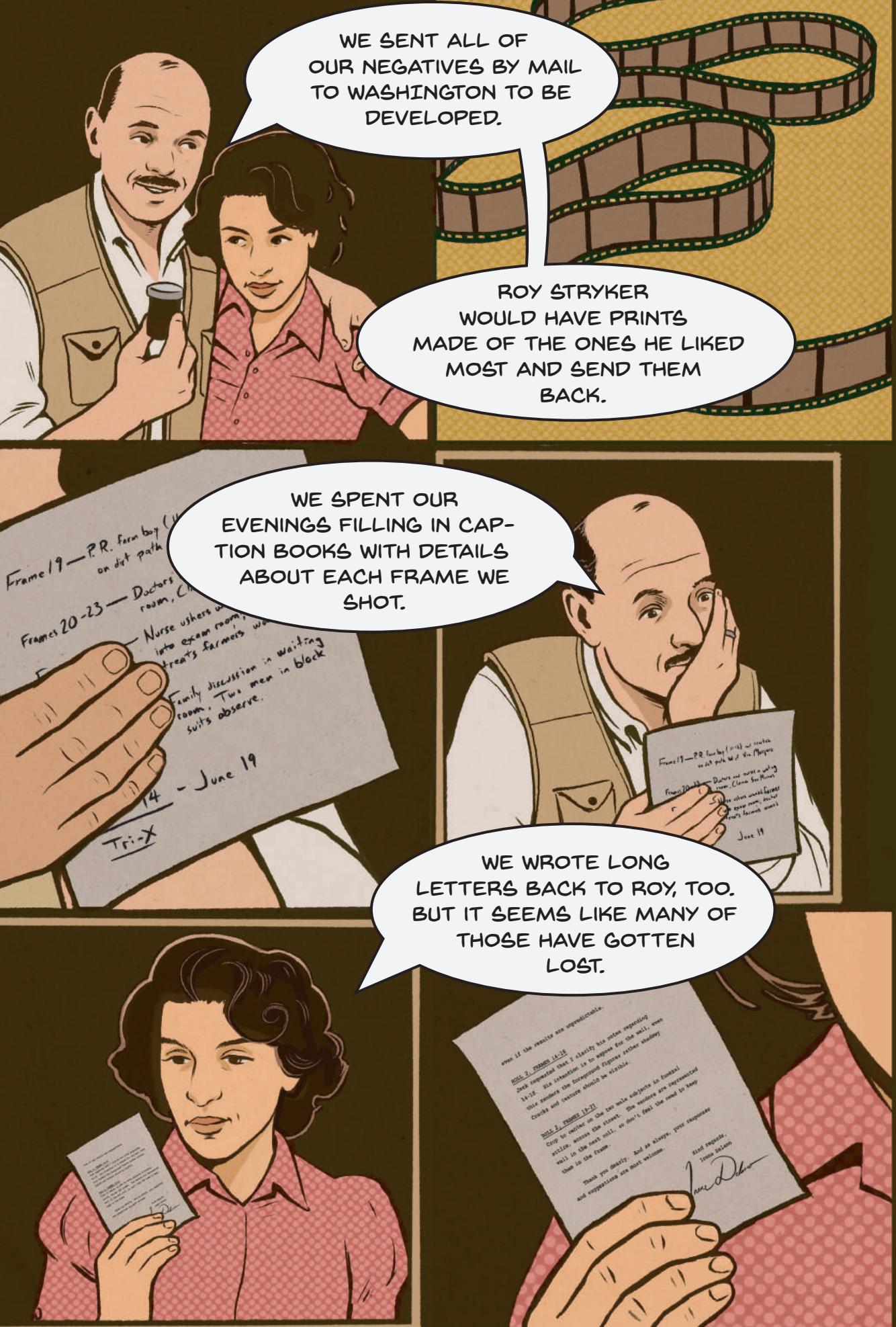
SO

MANY

ANY

MANY

STORIES.



THIS IS HELENA ZINKHAM, CHIEF OF THE LIBRARY OF CONGRESS PRINTS AND PHOTOGRAPHS DIVISION.



WHEN SOMEBODY GOES SEARCHING FOR A PHOTOGRAPH AT THE LIBRARY OF CONGRESS, THEIR CHANCES OF ACTUALLY FINDING IT ARE REALLY DEPENDANT ON HOW MUCH INFORMATION IS ATTACHED TO THAT PHOTOGRAPH.

EVERY LITTLE PIECE OF DATA MAKES AN OBJECT MORE FINDABLE.

PLACE: Guanica, Puerto Rico  
DATE: January 6, 1942  
PHOTOGRAPHER: Delano, Jack

DESCRIPTION:  
At a Three Kings' eve party in a tenant farmer's home in the sugar country



BUT THERE ARE MORE THAN FOURTEEN MILLION PHOTOGRAPHS IN THE COLLECTION AND FOR A LOT OF THOSE IMAGES THERE IS VERY LITTLE INFORMATION IN THE CATALOG.

OUR CATALOGERS DO THEIR BEST TO ADD AS MANY DETAILS TO THE RECORDS AS THEY CAN.

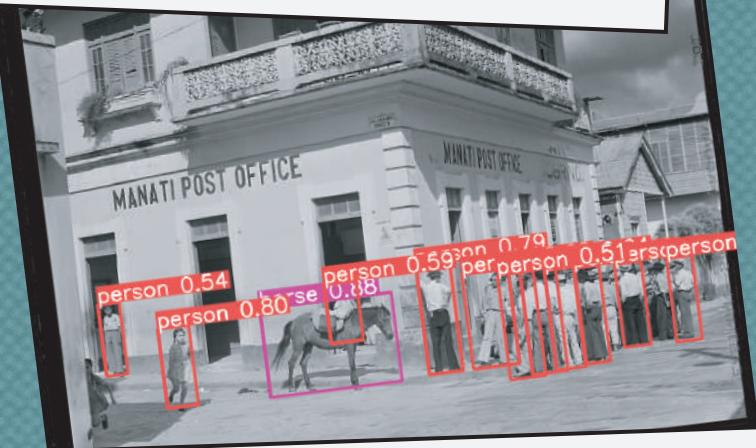
WHAT IF COMPUTERS COULD HELP HELENA'S TEAM TO FILL SOME OF THE GAPS IN THE CATALOG DATA? THIS COULD MAKE PHOTOS LIKE JACK'S MORE FINDABLE FOR ANYONE LOOKING FOR IMAGES OF PUERTO RICO IN THE 1940S.

LET'S GIVE IT A TRY WITH THIS IMAGE.



WE'LL USE A MACHINE LEARNING MODEL CALLED THE VISION TRANSFORMER (ViT).

THE VISION TRANSFORMER DOES TWO THINGS.



1.

IT TRIES TO DETECT KNOWN ELEMENTS IN THE IMAGE (THINGS LIKE PEOPLE OR CARS OR FLOWERS), AND IT LEARNS THE SIZE & POSITION OF THOSE THINGS.

2.

IT USES WHAT IT HAS LEARNED FROM THE LABELLED IMAGES IT WAS TRAINED ON TO GENERATE A NEW CAPTION.

{  
"generated\_text":  
"a man standing next to  
a building with a horse"  
}

THEY'RE OFTEN WORSE THAN HAVING NO CAPTION AT ALL.

THESE MACHINE-GENERATED CAPTIONS COME NOWHERE NEAR THE LIBRARY'S EXACTING STANDARDS.



{"  
"generated\_text":  
"a woman is standing in  
a parking lot "  
}

... AND PLACES THAT AREN'T IN THEIR WORLD VIEW, LIKE LOW-INCOME SETTLEMENTS.



{"  
"generated\_text":  
"a man in a field with  
a bunch of dead trees "  
}

VERY OFTEN THOUGH, THE MODELS STRUGGLE WITH OBJECTS THAT AREN'T FOUND A LOT IN THEIR TRAINING SETS (LIKE SUGAR CANE)



{"  
"generated\_text":  
"people standing around a building "  
}

SOMETIMES THE IMAGE DESCRIPTIONS WE GET FROM JACK'S IMAGES OF PUERTO RICO ARE ACCURATE... IF A LITTLE BIT UNIMAGINATIVE.



THESE KINDS OF MACHINE LEARNING MODELS ARE OFTEN TRAINED ON A 2012 DATASET CALLED **IMAGENET**.

IMAGENET CONTAINS 14,197,122 IMAGES, SCRAPED FROM THE INTERNET.



THE CLASSES THEMSELVES CAME FROM GRAD STUDENTS WHO, IN THE 1990S, HAND-TAGGED TEXT CONTENT FROM THE **WALL STREET JOURNAL**.



A MODEL TRAINED ON IMAGENET THEN, KNOWS ONLY WHAT IT HAS LEARNED FROM THE INTERNET (MEMES AND ALL), READ THROUGH THE LENS OF A NEWSPAPER FROM NEW YORK CITY, WRITTEN FOR MIDDLE-AGED STOCK TRADERS.



THESE IMAGES WERE INDIVIDUALLY TAGGED BY CONTENT WORKERS ALL AROUND THE WORLD (WHO WERE OFTEN MAKING FAR LESS THAN MINIMUM WAGE).



WORKERS COULD CHOOSE TO TAG IMAGES FROM 22,000 'CLASSES', BORROWED FROM A LEXICAL DATABASE CALLED **WORDNET**.



IT IS A MODEL THAT KNOWS A LOT ABOUT CATS...



AND VERY LITTLE ABOUT PUERTO RICO IN THE 1940S.

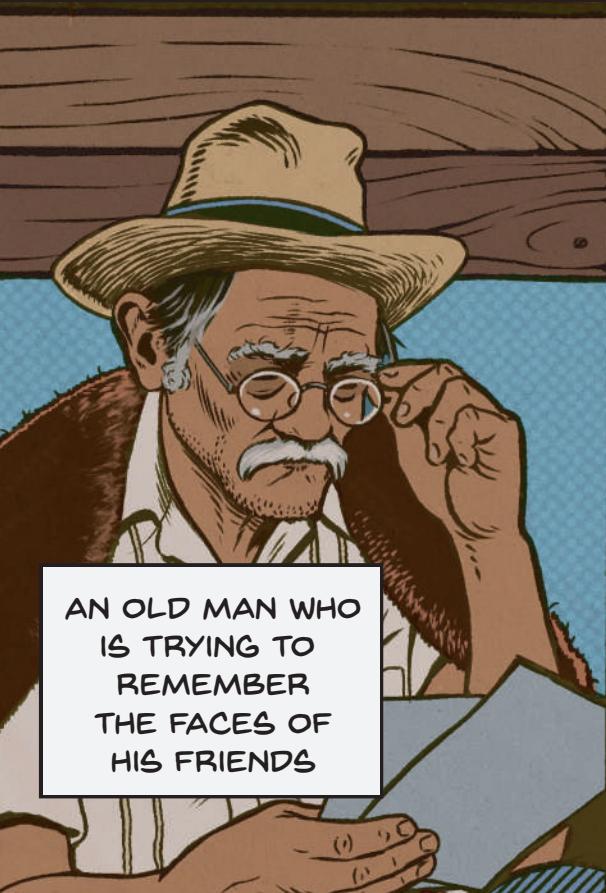
INSTEAD OF A MODEL TRAINED ON RANDOM IMAGES FROM THE INTERNET, WE MIGHT IMAGINE A MODEL TRAINED ON THE THOUSANDS OF IMAGES JACK DELANO TOOK IN PUERTO RICO, AND THOUSANDS MORE IMAGES FROM THE LIBRARY OF CONGRESS COLLECTIONS. A TOOL LIKE THIS COULD HELP A LOT OF PEOPLE...



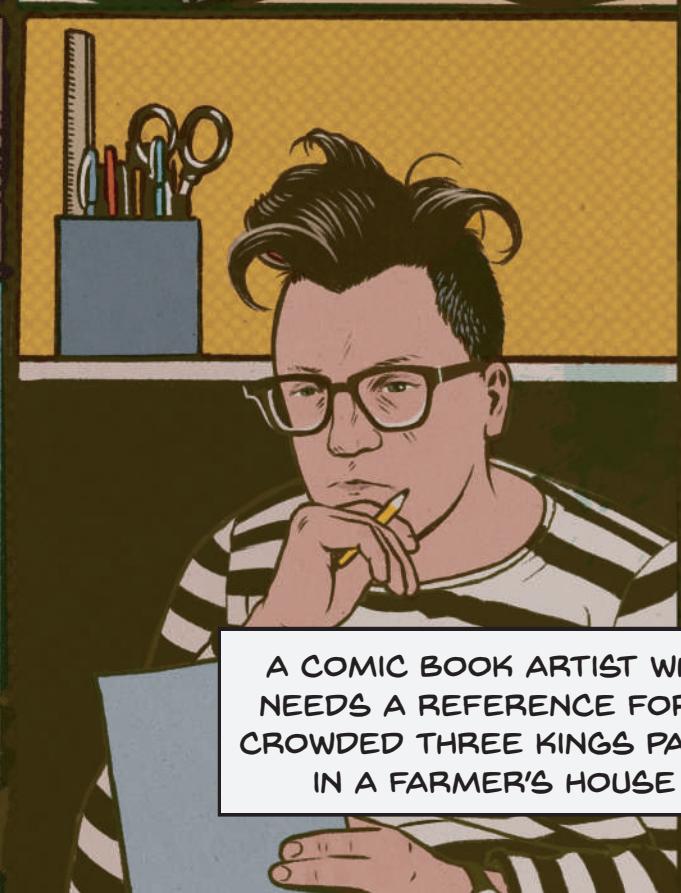
A 9 YEAR OLD GIRL WHO WANTS TO KNOW MORE ABOUT HOW HER GRANDPARENTS GREW UP



A RESEARCHER WHO'S STUDYING LATIN AMERICAN LABOR MOVEMENTS



AN OLD MAN WHO IS TRYING TO REMEMBER THE FACES OF HIS FRIENDS



A COMIC BOOK ARTIST WHO NEEDS A REFERENCE FOR A CROWDED THREE KINGS PARTY IN A FARMER'S HOUSE



IT WOULD ALSO RAISE A LOT OF QUESTIONS.  
WHY IS ALL OF THIS KIND OF WORK BEING DONE BY BIG, FOR-PROFIT COMPANIES?  
AND WHY DOES THE DATA ALWAYS SEEM TO GET USED BY PEOPLE WHO AREN'T PUERTO RICAN?  
IT ALL JUST FEELS LIKE ANOTHER FLAVOR OF COLONIALISM.



THINKING ABOUT A.I. IN THE CONTEXT OF **COMMUNITIES**, CARE, AND **RESPONSIBILITY** IS HARD, BUT **NECESSARY**.

WE MIGHT ASK OUR FRIEND JACK DELANO FOR SOME ADVICE...



THERE'S NO WAY WE COULD HAVE KNOWN ABOUT THE WAYS OUR PHOTOGRAPHS MIGHT BE USED EIGHTY YEARS IN THE FUTURE.

AND THAT WAS TO ALWAYS TREAT OUR SUBJECTS WITH RESPECT.

BUT WE ALWAYS DID HAVE ONE PRINCIPAL THAT GUIDED THE WORK THAT WE DID. ALL OF IT, FROM PENNSYLVANIA TO PUERTO RICO.

MACHINE LABELING?  
FACIAL RECOGNITION?  
NONE OF THAT WOULD HAVE EVEN OCCURRED TO US.





**RESPECT** MEANS MAKING SURE THE PEOPLE WHO ARE MOST DEEPLY CONNECTED TO THE DATA ARE IN THE ROOM WHEN DECISIONS ARE MADE

IT MEANS IMAGINING WAYS THESE TECHNOLOGIES MIGHT **HELP** PEOPLE AND COMMUNITIES, WHILE ALSO BEING MINDFUL OF **RISKS** AND **HARMS** AND UNEXPECTED CONSEQUENCES.

IT MEANS COMING TOGETHER TO **TALK**.

TO **LEARN**.

TO **LISTEN**.

TO **COLLABORATE**.

TO **DREAM**.

WHO?  
Faces  
Ages  
Relationships  
Activities  
Clothing  
Interactions

WHERE?  
Geography  
Climate  
Physical Char.  
Metro/rural/  
suburban/nat.  
Population  
Culture

What story does  
a picture tell?



PHOTOGRAPHY

Formats

- Black & white

Style/Genre

- Abstract

- Journalistic

- Artistic

- Narrative

Landscape

JACK DELANO DIED IN 1997  
IN PUERTO RICO. HE WAS 83.

HIS CASKET WAS LAID IN STATE IN THE  
CAPITOL BUILDING IN SAN JUAN.

