



# MonJa

## HOW ALTERNATIVE DATA TRANSFORMS LENDING

James Wu, CEO, MonJa

# WHO IS MONJA?

## Credit Risk and Data Expertise In Online and Offline Lending

**\$15B+ Online Loans Under Analysis**

Deep Financial Services Experience within Core Team

We Speak Regularly At Industry Conferences

Our Quantitative Loan Analysis Is Featured In Top Publications

Morgan Stanley

MSCI 

 RMS



RiskMetrics



Financial Engines®



AB  
AMERICAN BANKER.

IMN



TechCrunch

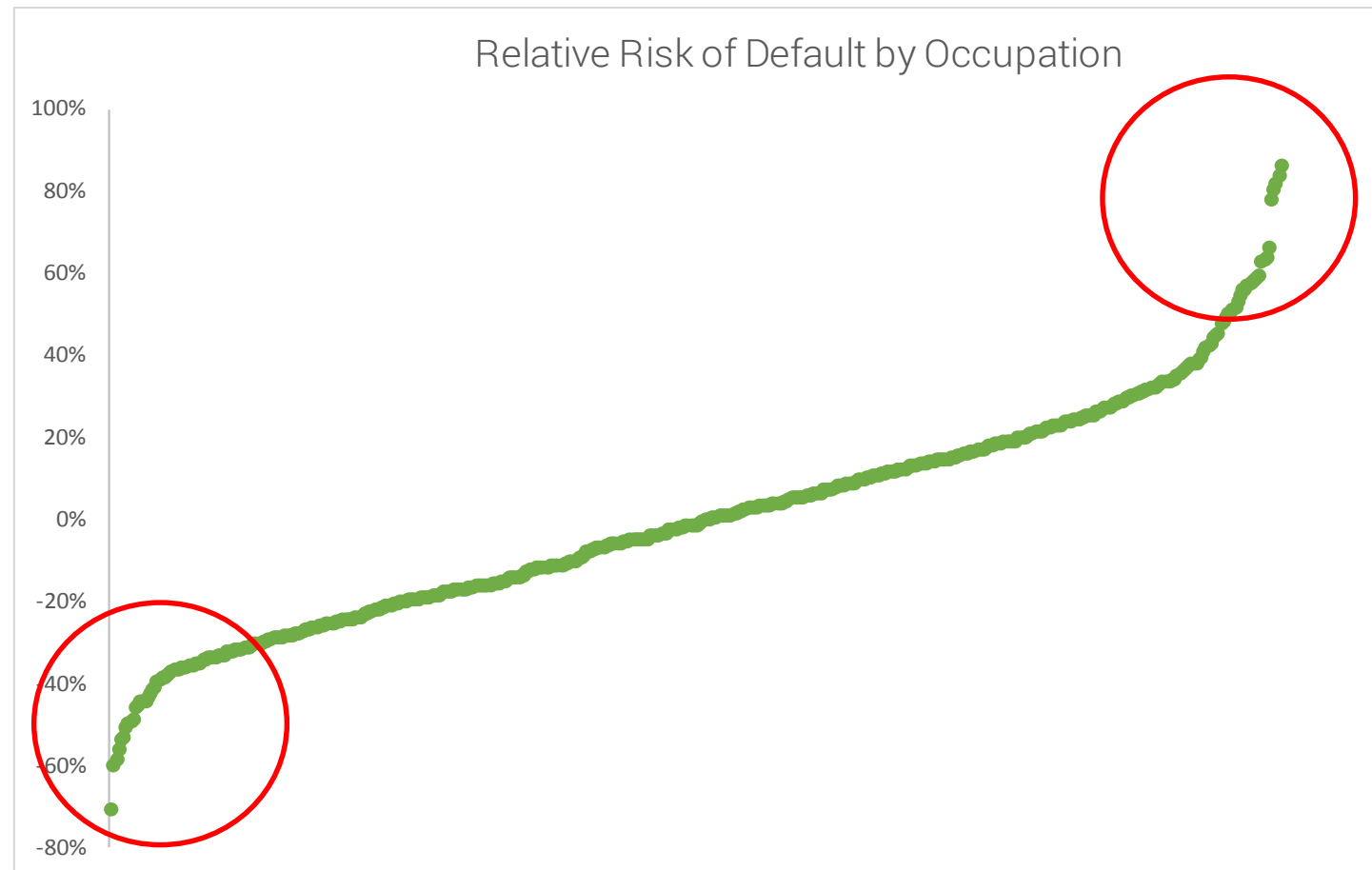
AB  
AMERICAN BANKER.

FT  
FINANCIAL  
TIMES

Bloomberg

MonJa

# Machine Learning on Occupations and Default Risk



**"Safe" Occupations:**

- Resident Physician: -71%
- Associate Professor: -60%
- Senior Pastor: -58%
- Police Sergeant: -54%

**"Risky" Occupations:**

- Mortgage Banker: +84%
- Janitor: +82%
- Sous Chef: +59%
- Message Therapist: 51%

# USE AI TO READ ONLINE REVIEWS

ML for Semantic Parsing - extract meanings from reviews



**Chris H.**

Anaheim, CA

👤 1 friend

★ 20 reviews

★ ★ ★ ★ ★ 11/25/2016

I used to come here often but when I started observing how they prepared sandwiches, I was so **disgusted**. On several occasions, I noticed that the staff very seldom wash their hands. For instance, one of the employees was scratching her nose and touching her mouth and face while taking payment at cash register. After she assisted customer, she went straight for the **gloves!** Really? The glove is now contaminated and she's going to touch the rest of the veggies. Also, they think that wearing a glove protects from all **bacteria** so they use it to open the toaster, reefer, and other cabinets all the while using the same gloves to help next customer. Very **unsafe** and **disgusting**. Never going back to a place like this.

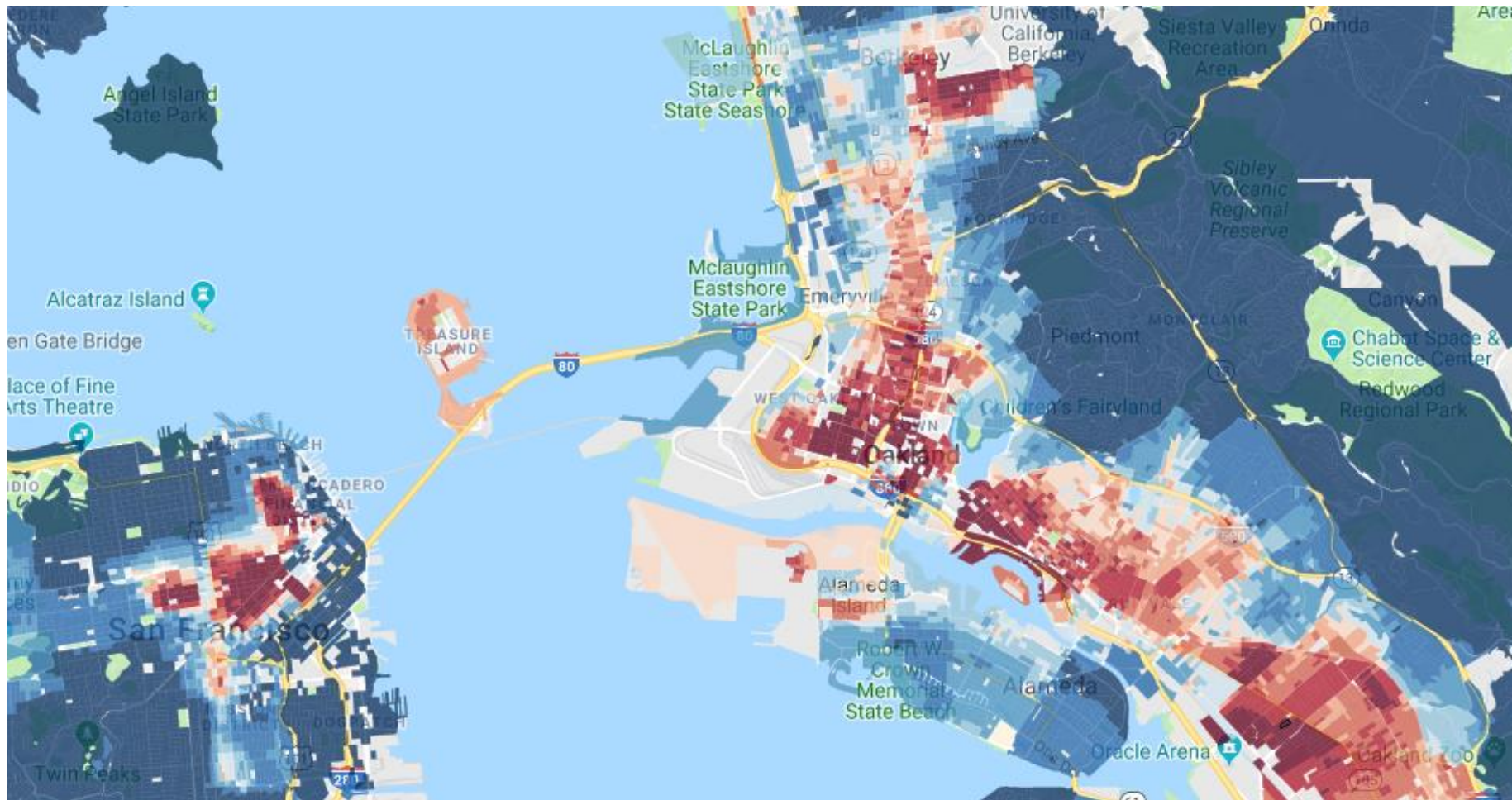
I'll start by saying that the employees here are very nice and took great care of us. The woman sort of ignored us when we pointed out the mass of sugar **ants** that was crawling all over the floor but it could have been that she didn't understand what we were saying to her.

This is probably the worst subway sandwich and experience I've had in the last year. The people didn't speak English and didn't seem to have any idea how to do their jobs. The sandwich was a gooey **mess**, and the tomatoes were pale, almost green.



# Estimate Income Distribution with very high resolution

- Previously income distribution can only be estimated on the city / census tract level
- Generative modeling let's us estimate income distribution with much higher resolution



# Broader image recognition

- Based on exterior or Google streetview photographs, AI can pick up signs of potentially problematic neighborhood characteristics



## Image Characteristics:

Boarded up door: 74%

Graffiti: 56%%

Fire Damage: 43%



# AI can recognize signs of costly property damage

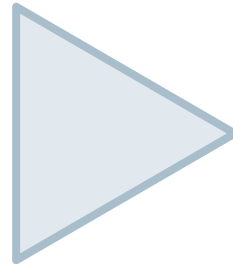
- AI can pick up signs of potential property damage from automated analysis of property photographs.
- This highlights red flags for certain types of investment real estate loans



# Intelligent Financial Transaction Extraction

Detail Continued				Amount
05/09/18	WWW.ISTOCK.COM 31618342 94104 ISTOCKPHOTO LP PURCHASE	866-478-6251	WA	\$33.00
05/09/18	WWW.ISTOCK.COM 31618354 94104 ISTOCKPHOTO LP PURCHASE	866-478-6251	WA	\$12.00
05/09/18	WWW.ISTOCK.COM 31618318 94104 ISTOCKPHOTO LP PURCHASE	866-478-6251	WA	\$33.00
05/09/18	WPMU DEV MONTHLY PLAN 8889639528	BIRMINGHAM	AL	\$19.00
05/09/18	WWW.ISTOCK.COM 31618346 94104 ISTOCKPHOTO LP PURCHASE	866-478-6251	WA	\$33.00
05/09/18	WWW.ISTOCK.COM 31618312 94104 ISTOCKPHOTO LP PURCHASE	866-478-6251	WA	\$33.00
05/09/18	WWW.ISTOCK.COM 31618333 94104 ISTOCKPHOTO LP PURCHASE	866-478-6251	WA	\$33.00
05/10/18	GITHUB GITHUB 4152910224	SAN FRANCISCO	CA	\$61.00
05/10/18	WWW.ISTOCK.COM 31624937 94104 ISTOCKPHOTO LP PURCHASE	866-478-6251	WA	\$33.00
05/11/18	LINKEDIN-308*1511266 SUBSCRIPTION	LNKD.IN/BILL	CA	\$101.73
05/12/18	ROCKETREACH LLC 415-669-0604	MOUNTAIN V	CA	\$99.00
05/13/18	Atlassian COMPUTERS & EQUIPMENT	San Francisco		\$30.00
05/13/18	LEAD411 LEAD411-BASIC +18776731022	BOULDER	CO	\$100.00
05/14/18	UPWORK*-180648063REF BUSINESS SERVICE	DUBLIN		\$107.03
05/16/18	ZAPIER.COM/CHARGE 8773818743	SAN FRANCISCO	CA	\$20.00
05/16/18	GITHUB GITHUB 4152910224	SAN FRANCISCO	CA	\$7.00
05/16/18	LINKEDIN-309*1424086 SUBSCRIPTION	LNKD.IN/BILL	CA	\$124.16
05/17/18	GOOGLE *ADWS3269827510 ADVERTISING	CC@GOOGLE.COM	CA	\$500.00
05/17/18	UBERCONFERENCE 415-842-9989	SAN FRANCIS	CA	\$23.05
05/17/18	DEAD HANS SMYCH DEADMAN +16164992122	HOLLAND	MI	\$5.00
05/17/18	MSFT *E04005TGB6 0000 800-642-7676	MSBILLINFO	WA	\$12.00
05/18/18	LISTS FOR LESS squareup.com/receipts	Boston	MA	\$20.00

Continued on reverse



```

1  [
2  {
3    "date": "2018-05-09",
4    "amount": 33.21,
5    "merchant": "www.istock.com",
6    "category": "marketing",
7    "notes": ""
8  },
9  {
10   "date": "2018-05-10",
11   "amount": 121.35,
12   "merchant": "GitHub",
13   "category": "cloud_computing",
14   "notes": ""
15  },
16  {
17   "date": "2018-05-15",
18   "amount": 254.55,
19   "merchant": "Kabbage",
20   "category": "finance",
21   "notes": "POTENTIAL DEBT PAYMENT"
22  }
23 ]

```



# CHATBOTS FOR WORKFLOW

We use chatbots to help clients automate routine tasks



**jameswu** 5:38 PM

@monjabot, please run credit facility report for yesterday



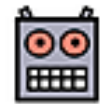
**MonJa Bot** APP 5:38 PM

Do you want it for a specific portfolio or the whole report?



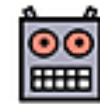
**jameswu** 5:38 PM

whole report



**MonJa Bot** APP 5:38 PM

Got it. Running Credit Facility Report from 2018-05-13 to 2018-05-23. Please give it a minute or two.



**MonJa Bot** APP 5:41 PM

uploaded this file ▾



**Credit Facility Report - 2018-05-23.xlsx**

2 MB Excel Spreadsheet