



# DefaultFinder

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By Kush Patel

Kiva could have saved ...

**~ \$ 3 Million**



**In this Group:** Djénéba, Kadia, Fatoumata, Boh, Dji, Kadiatou, Fanta\*  
\* not pictured

Dji is the one in the photo with the plate containing three pieces of soap. She is 48 years old and a merchant selling soap and sauce ingredients. She has been in this business for fifteen years. Her supplies of condiments are gotten at the big market in the capital and are then sold at the communal market in her town. She has two children, aged 18 and 15, both in school.

Dji wants to grow her business, that is, to sell a lot of [condiments] and soap to meet the needs of the family. She plans on putting all her love into a judicious investment with the funds received. The problem with which she is confronted is sometimes the quick outflow of merchandise.

A portion of Danaya Group's \$1,800 loan helps a member to purchase supplies and soaps to resell.



Select amount to lend

\$25 ▼

Lend \$25

<a href="#">Repayment Term</a>	8 months (Additional Information)
<a href="#">Repayment Schedule</a>	Irregularly
<a href="#">Pre-Disbursed:</a>	May 8, 2015
<a href="#">Listed</a>	Jun 10, 2015
<a href="#">Currency Exchange Loss:</a>	Possible

Your funds will be used to backfill this loan  
Repayments will go to you

FIELD PARTNER [Learn more](#)



Réseau de Micro-institutions de Croissance de Revenus (RMCR) administers this loan.

Social Performance Badges:



# Example of Loan Information

Name	country_code	Activity	funded_amount	geo_level	latitude	lender_count
Ritah	Uganda	Beauty Salon	250	Town	0.32	1

longitude	num_borrowers	partner_id	repayment_interval	repayment_term	sector	status
32.56	1	112	monthly	4	Services	fundraising

# Best Model

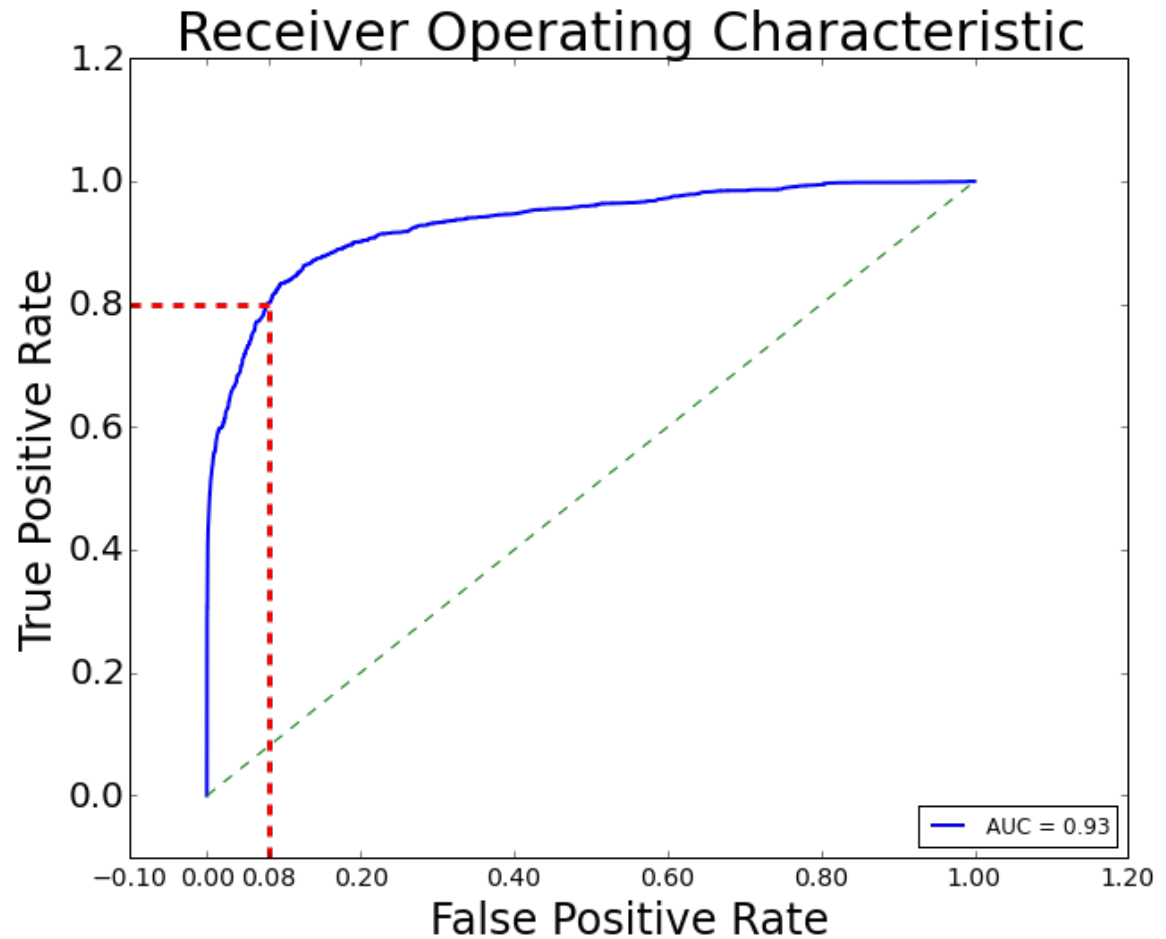
Gradient Boosting  
Classifier:

AUC = 0.93

Recall = 0.8

FPR = 0.08

F1-score = 0.86



# Profit Curves & Cost Benefit Matrix

Translate Machine Learning Model to Business Aspect

# What is Cost Benefit Matrix

		Actual	
		Defaulted	Not Defaulted
Predicted	Defaulted	+ \$	- \$
	Not Defaulted	- \$	+ \$

# Cost Benefit Matrix

		Actual	
		Defaulted	Not Defaulted
Predicted	Defaulted	<b>+ \$ 565</b>	<b>- \$ 0</b>
	Not Defaulted	<b>- \$ 607</b>	<b>+ \$ 0</b>



# Assumption in Cost Benefit Matrix

		Actual	
		Defaulted	Not Defaulted
Predicted	Defaulted	+ (Loan + Interest )	- 0
	Not Defaulted	- (Loan + Interest + churn cost)	+ 0

# Profit Curve

**Average profit per loan**

**( \$ 3.32)**

**X**

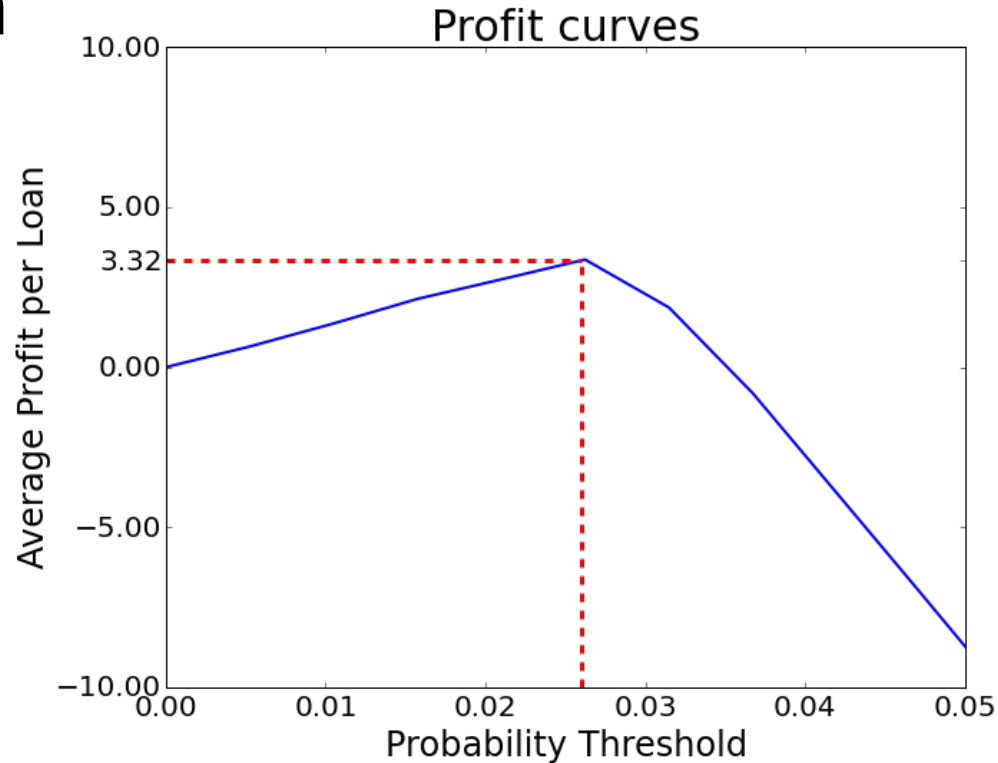
**Number of loans**

**(907,750)**

**=**

**Profit**

**(~\$ 3 Million)**





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