

Kipfian

a Kiva recommender system

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Kipfian

Feeling good?

Enter Your Kiva ID

matt

Submit

Recommendations



Joel is 65 years old and from Nyandarua South. He is married, with children who are all grown up. Joel has a farming business that he has been doing for the past 33 years. He has applied for his fifth loan from KADET Ltd. to enable him to buy farm inputs like seedlings and fertilizers. He hopes to expand his farm in the near future.

Let me help



Saum is a married woman with seven children six of whom are enrolled in school and the other one is too young for school. Her husband is a farmer who contributes to the provision of family basic needs. She owns a house with neither electricity nor piped water. Her greatest monthly expense is food for family. Saum has operated as a cashew nuts seller for the past one year; she sells her products from the market place and her potential clients are the people who come to the market. She faces a major challenge of seasonality where the cashew nuts are available only during the harvesting season. She aspires to become a cashew nuts supplier in the future. With the Kshs 10,000 she wants to purchase ten bags of cashew nuts for resale. She decided to join Yehu Microfinance to access fund to help her boost her living standards.

Let me help

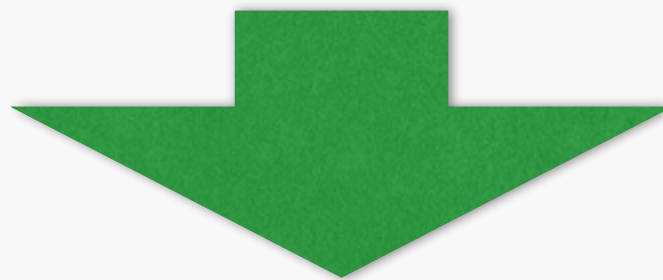


Helen owns and operates a plot of farmland, cultivating vegetables for sale to earn a living. She has successfully repaid her previous loan used for their farm and was able to put up a new business raising pigs for sale. She joined GDMPC and took a new loan recently to buy fertilizer to produce more harvest in return. Her desire is to improve the farm in order to have a better source of income for the family.

Let me help

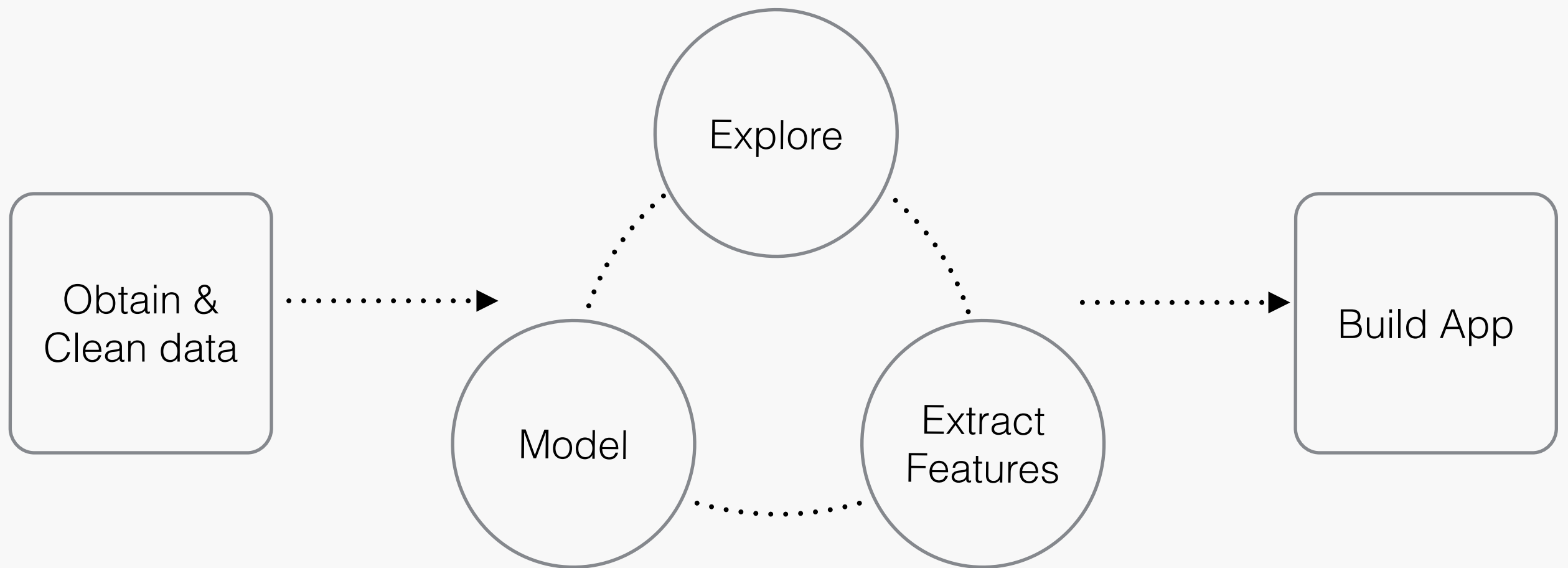
Why?

- Despite 98% repayment rate...
- ... 4% didn't get funded —> **32,721 stories**



How can we maximize the
likelihood of getting funded?

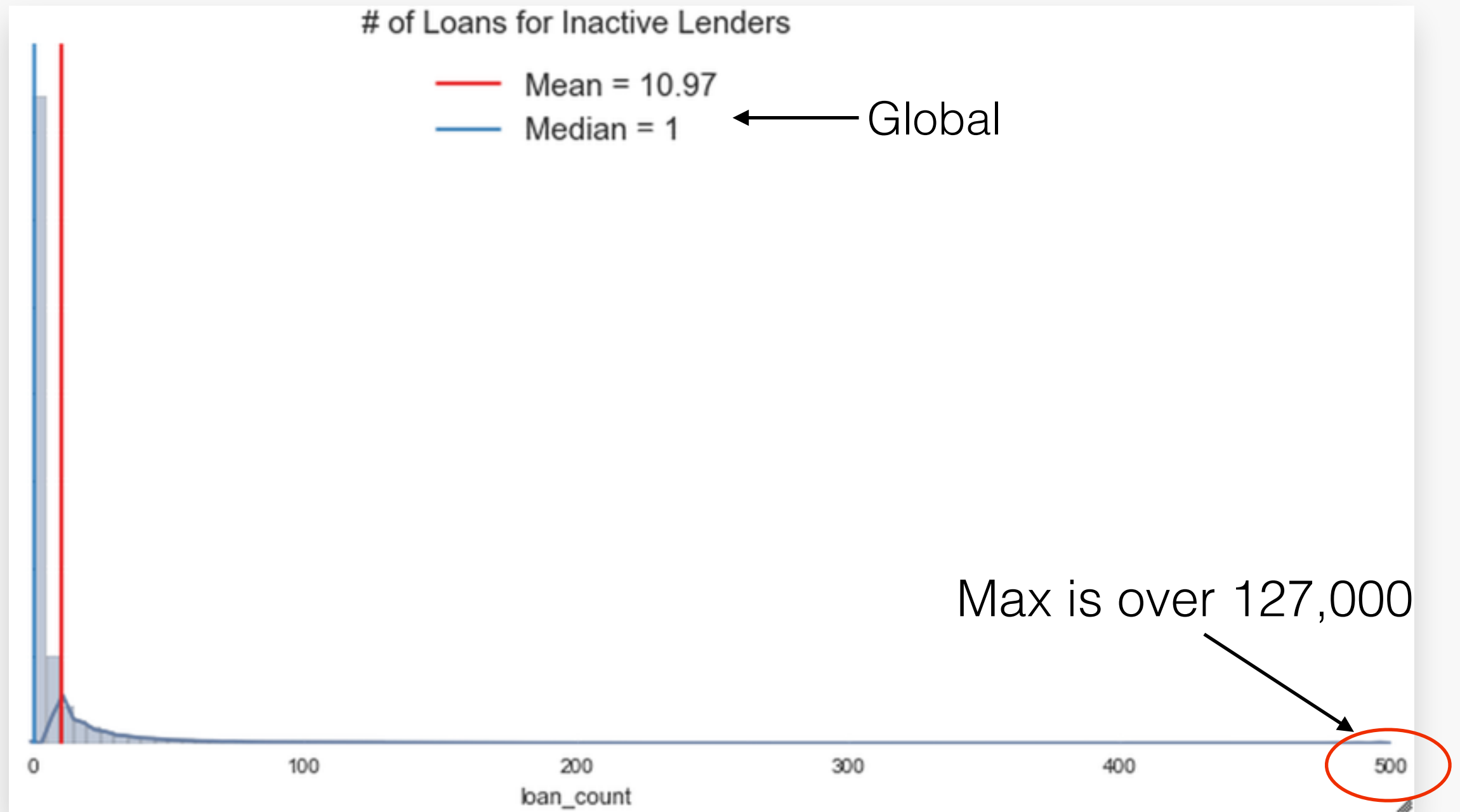
Process Overview



What's in the Data?

- 5Gb data snapshot, dated back to 2006
- 3000+ JSONs
- Over 800,000 loans, 1.6M lenders

Extremely Sparse



What loans are most lentended?

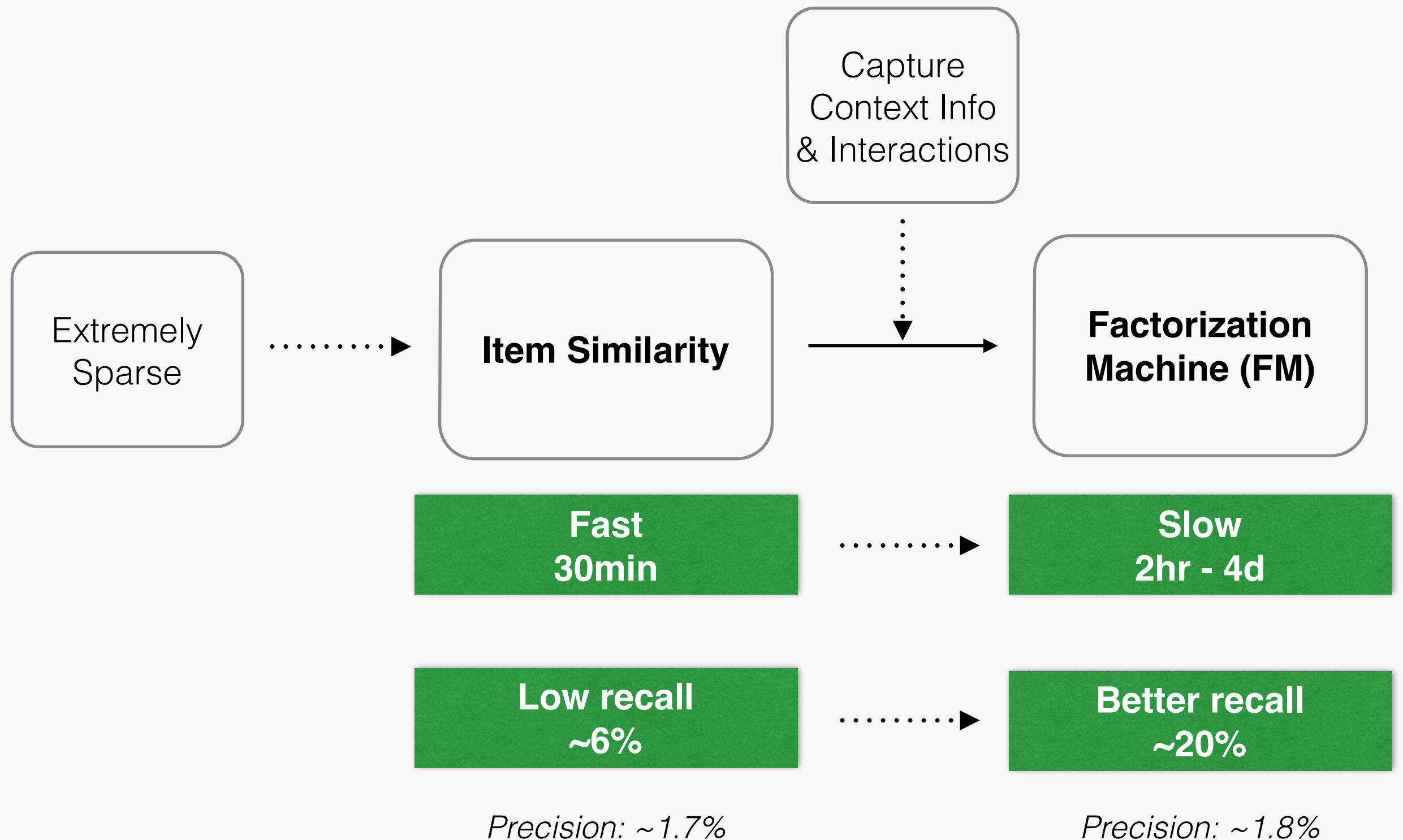


```
1: [business] Latin America borrowing for business
2: [business] initial funding to start business
3: [farming] preparing for the season
4: [business] open a store and payback
5: [farming] preparing for the season
6: [business] women group, small business
7: [farming] preparing for the season
8: [business] initial funding to start business
9: [farming] preparing for the season
10: [farming] preparing for the season
11: [business] Latin America borrowing for business
12: [business] open a store and payback
13: [business] women group, small business
14: Iraq
15: [business] women group, small business
16: With translation
17: [business] women group, small business
18: [business] women group, small business
19: [business] open a store and payback
20: [business] women group, small business
```

Among top 20 most lentended loans...

7 are starting their business,
6 are women (groups) doing
small business,
5 are buying seeds for next
season

Models



Challenges

- Difficult to evaluate because...
 - data is super sparse
 - score is super small if including all data
- Computational cost
 - Ran several AWS instances (xlarge)
 - Still running...

Conclusion

- Think about business...
 - Kiva is a NGO with limited budget
 - Goal: as many loans get funded as possible
- Therefore...
 - FM may not be feasible due to computational cost
 - Recall isn't a good out-of-box metric
 - “conversion rate”

Next Steps

- Test effectiveness with **A/B testing**
- **Address cold start**
 - recommends almost-expired-almost-finished loans
- Get **more data**
 - Image processing of loan pictures
 - lending transaction details
- Consider other ways like better **page composition** or **marketing campaigns**

QA