Practice to Production: My Journey in Data Science

Page Piccinini

R-Ladies San Diego

March 19, 2019

I. My Background

I. My Background

II. What a Data Science Job Looks Like (industry case studies)

I. My Background

II. What a Data Science Job Looks Like (industry case studies)

III. How to Get a Job in Data Science

2006

2006

2006

2008

2006

MA / BA

2009

2008

2006

MA / BA

2009

2008

2010

2006

MA / BA

2009

2016

2008

2010

Timeline no longer to scale!

2006

MA / BA

2009

2016

2008

2010

Timeline no longer to scale!

2006

MA / BA

2009

2016

2008

2010

[PHD Comics]

Timeline no longer to scale!

2006

MA / BA

2009

2016

2008

2010

2017

[PHD Comics]

Timeline no longer to scale!

2006

MA / BA

2009

2016

2019

2008

2010

2017

[PHD Comics]

Timeline no longer to scale!

2006 experimental design

2009 MA / BA

2016

2019

2008

2010

2017

[PHD Comics]

Timeline no longer to scale!

2006

experimental design

MA / BA

2009

statistics / ML

2016

2019

2008

2010

2017

[PHD Comics]

Timeline no longer to scale!

2006 experimental design

MA / BA **2009**

2016 statistics / ML

2019

2008

2010

2017

[PHD Comics]

Timeline no longer to scale!

2006 experimental design

MA / BA **2009**

statistics / ML **2016**

2019

2008

2010

2017

[PHD Comics]

Timeline no longer to scale!

2006 experimental design

MA / BA **2009**

2016 statistics / ML

2019

2008

2010

2017

[PHD Comics]

Timeline no longer to scale!

2006 experimental design

MA / BA **2009**

2016 statistics / ML

2019

2008

2010

2017

[PHD Comics]

Timeline no longer to scale!

2006 experimental design

MA / BA **2009**

statistics / ML **2016**

2019

2008

2010

2017

[PHD Comics]

Timeline no longer to scale!

2006 experimental design

MA / BA

2009

statistics / ML **2016**

2019

2008

2010

2017

[PHD Comics]

What a Data Science Job Looks Like *

What a Data Science Job Looks Like *

* One person's experience

Topic: Recurring Donors

Topic: Recurring Donors

one-time donor

Topic: Recurring Donors

one-time donor

recurring donor

Topic: Recurring Donors

Question #1: How much is a recurring donor worth?

Topic: Recurring Donors

Question #1: How much is a recurring donor worth?

Discuss for 2 Minutes

Topic: Recurring Donors

Question #1: How much is a recurring donor worth?

How to Understand the Long-Term Return of Your Supporters

Topic: Recurring Donors

Question #1: How much is a recurring donor worth?

median one-time donation = $50
median recurring donation = $25

How to Understand the Long-Term Return of Your Supporters

Topic: Recurring Donors

Question #1: How much is a recurring donor worth?

median one-time donation = $50
median recurring donation = $25

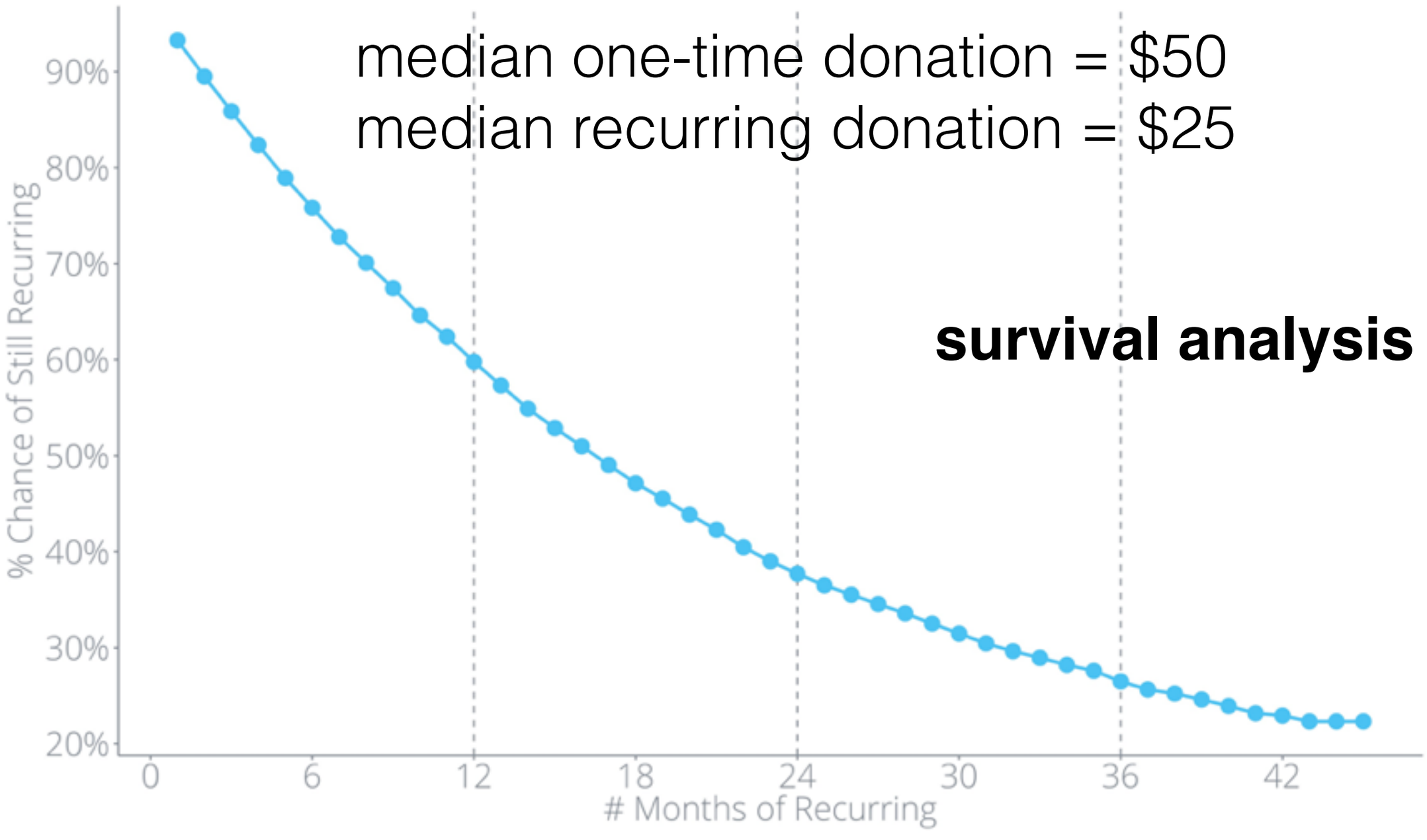
survival analysis

How to Understand the Long-Term Return of Your Supporters

Topic: Recurring Donors

Question #1: How much is a recurring donor worth?

median one-time donation = $50
median recurring donation = $25



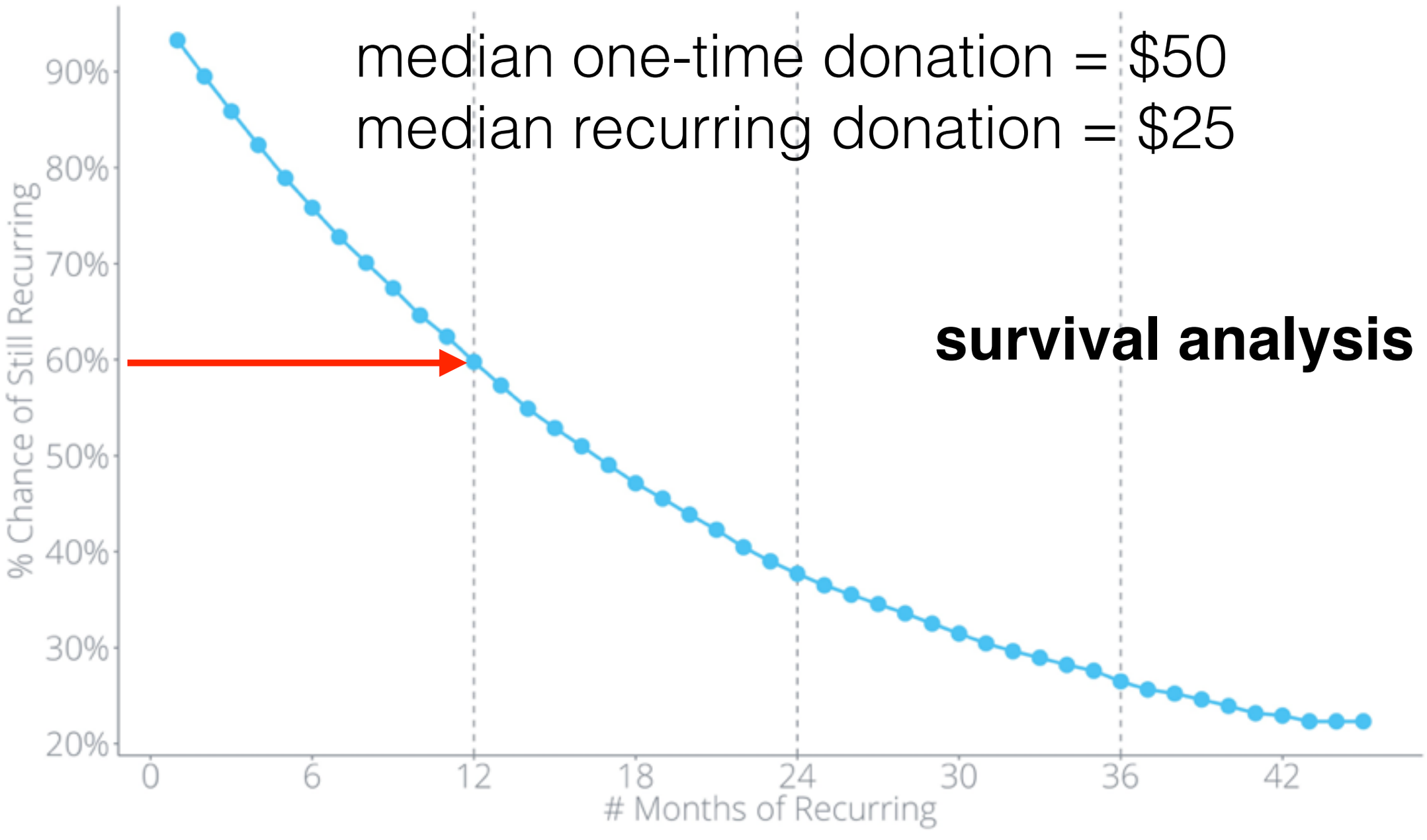
survival analysis

[How to Understand the Long-Term Return of Your Supporters]

Topic: Recurring Donors

Question #1: How much is a recurring donor worth?

median one-time donation = $50
median recurring donation = $25



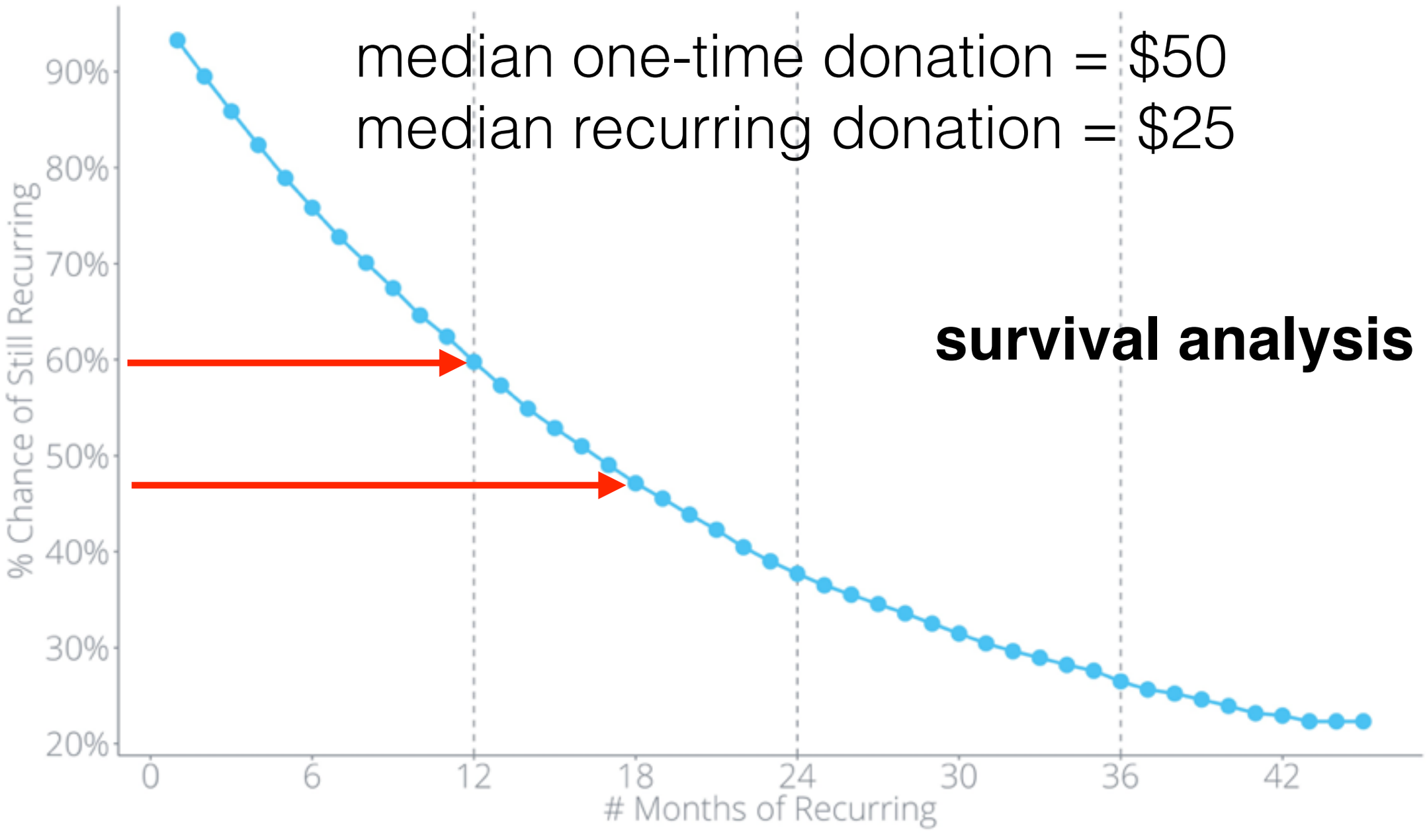
survival analysis

[How to Understand the Long-Term Return of Your Supporters]

Topic: Recurring Donors

Question #1: How much is a recurring donor worth?

median one-time donation = $50
median recurring donation = $25

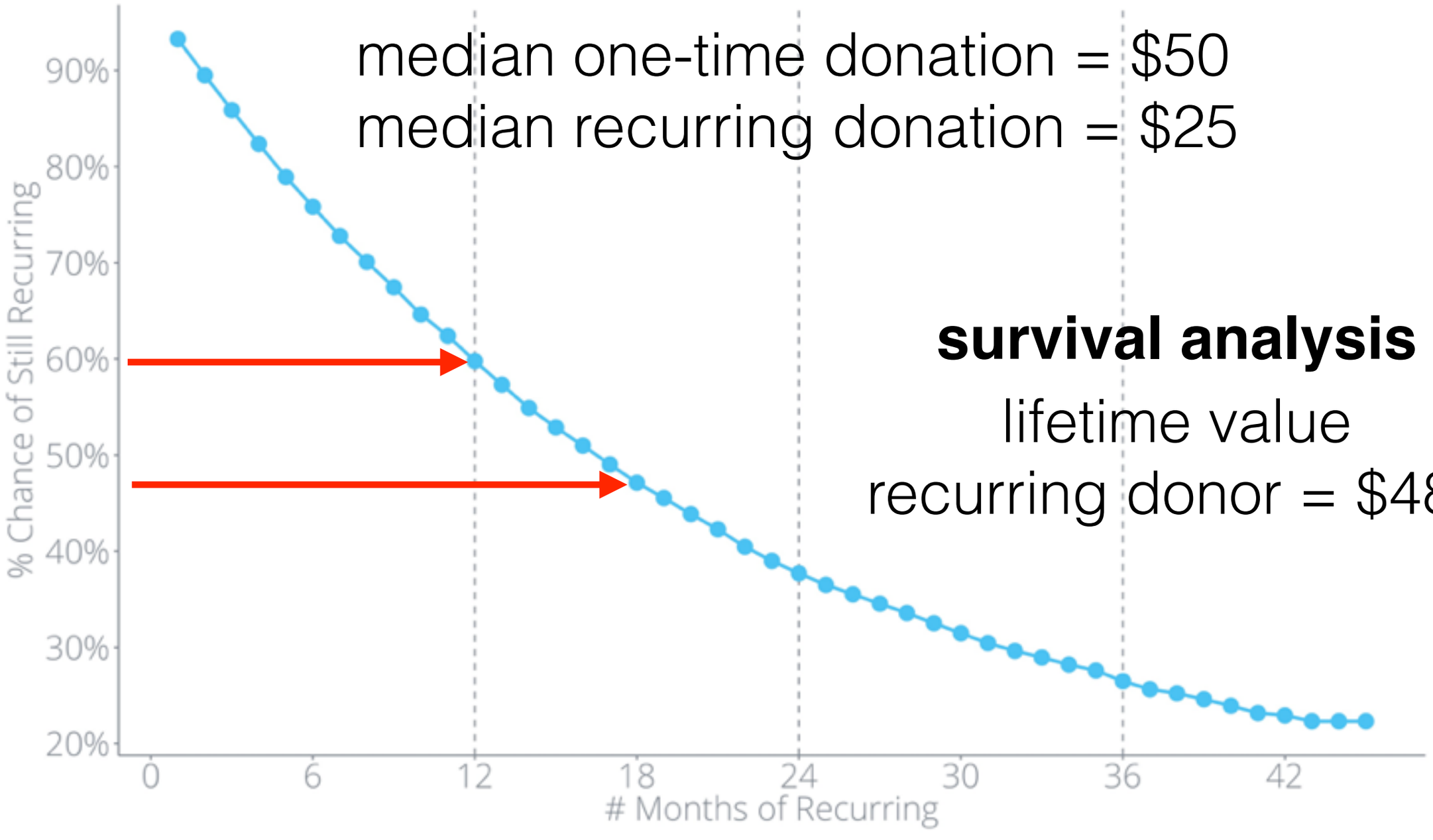


survival analysis

[How to Understand the Long-Term Return of Your Supporters]

Topic: Recurring Donors

Question #1: How much is a recurring donor worth?



median one-time donation = $50
median recurring donation = $25

survival analysis

lifetime value
recurring donor = $485

How to Understand the Long-Term Return of Your Supporters

Topic: Recurring Donors

Question #1: How much is a recurring donor worth?

What Data Science Skills Were Needed?

Topic: Recurring Donors

Question #1: How much is a recurring donor worth?

What Data Science Skills Were Needed?

Topic: Recurring Donors

Question #1: How much is a recurring donor worth?

What Data Science Skills Were Needed?

Topic: Recurring Donors

Question #1: How much is a recurring donor worth?

What Data Science Skills Were Needed?

statistics

Topic: Recurring Donors

Question #1: How much is a recurring donor worth?

What Data Science Skills Were Needed?

statistics

communication to general audience

Topic: Recurring Donors

Question #2: How can we get more people to become recurring donors?

Topic: Recurring Donors

Question #2: How can we get more people to become recurring donors?

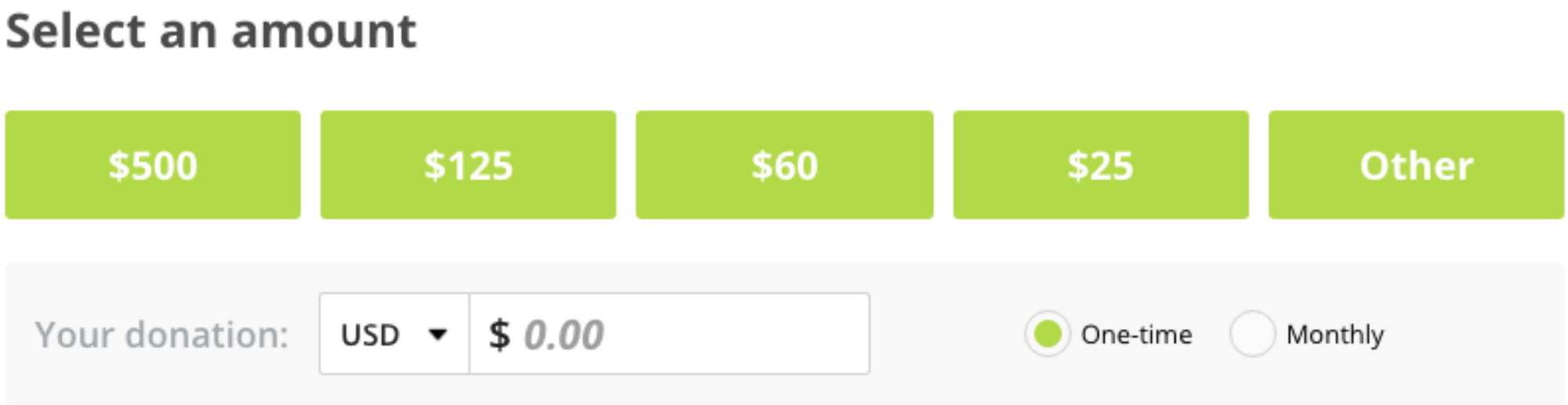
Discuss for 2 Minutes

Topic: Recurring Donors

Question #2: How can we get more people to become recurring donors?

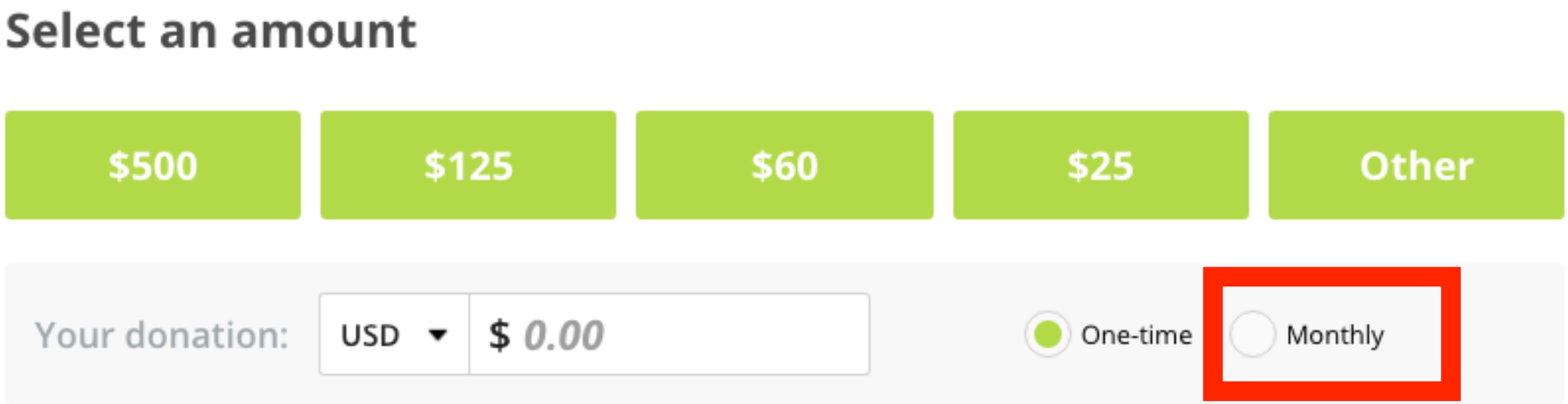
Topic: Recurring Donors

Question #2: How can we get more people to become recurring donors?



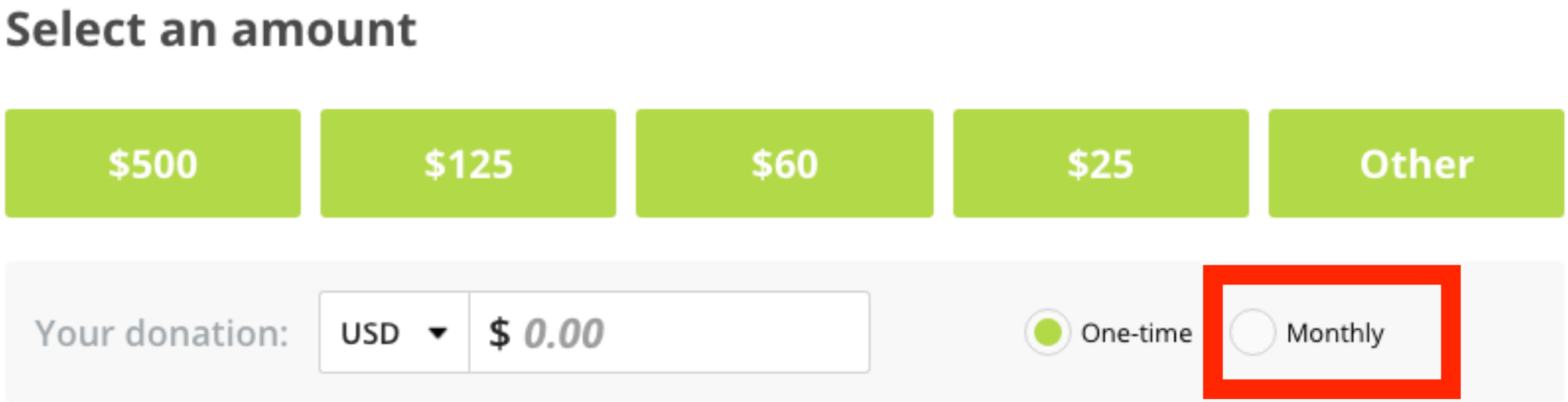
Topic: Recurring Donors

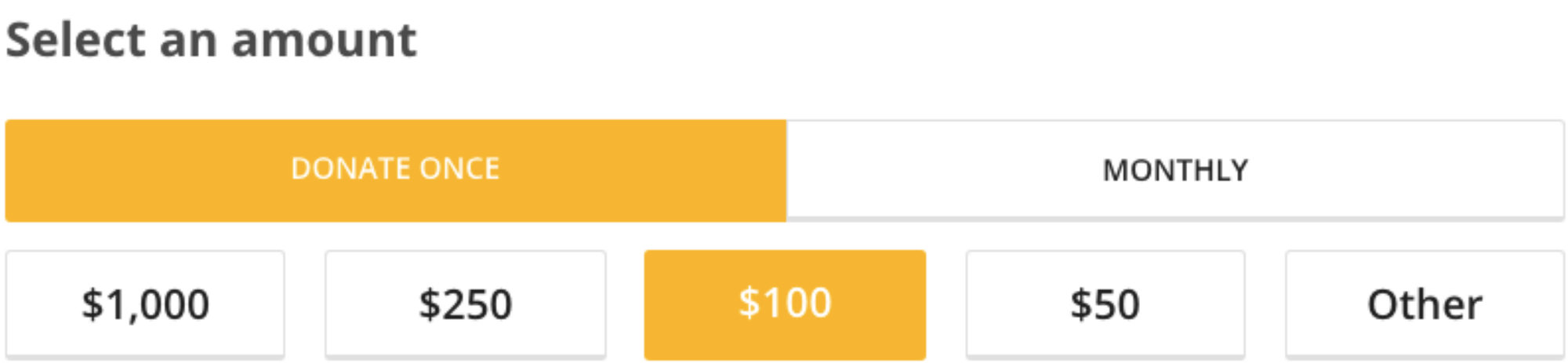
Question #2: How can we get more people to become recurring donors?



Topic: Recurring Donors

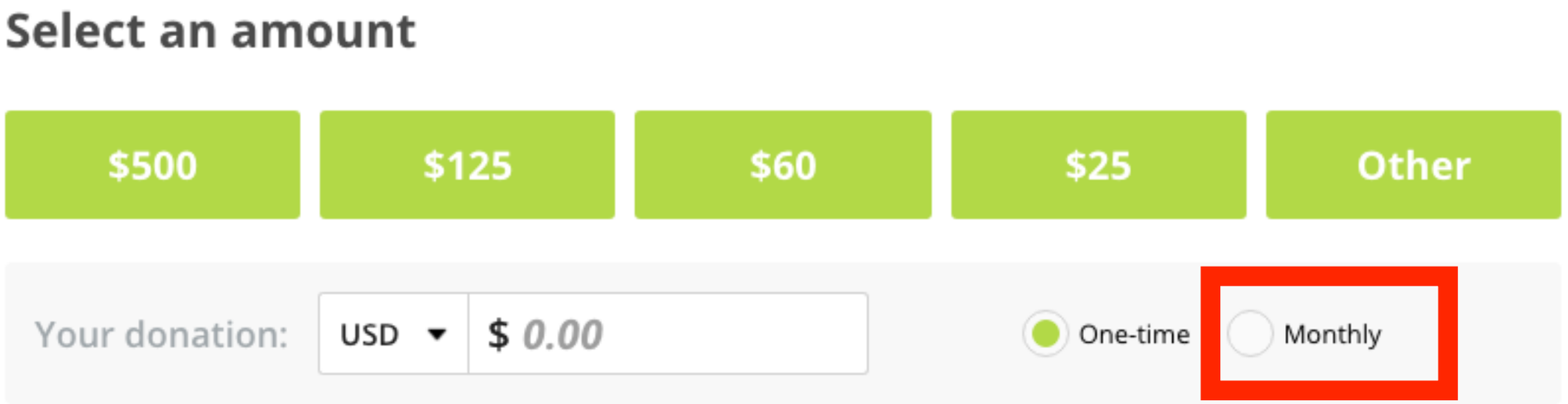
Question #2: How can we get more people to become recurring donors?





Topic: Recurring Donors

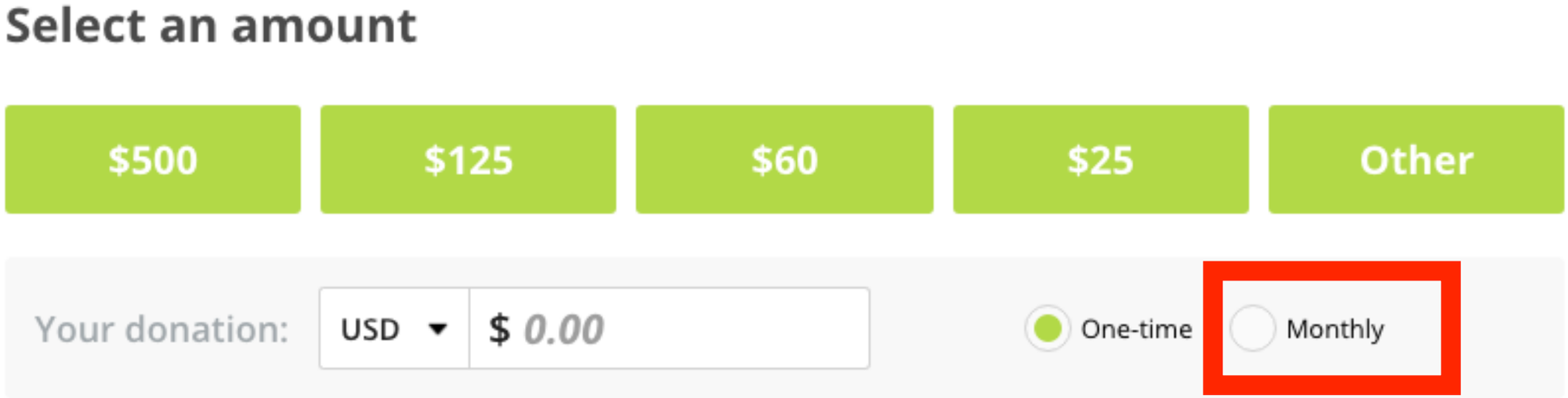
Question #2: How can we get more people to become recurring donors?

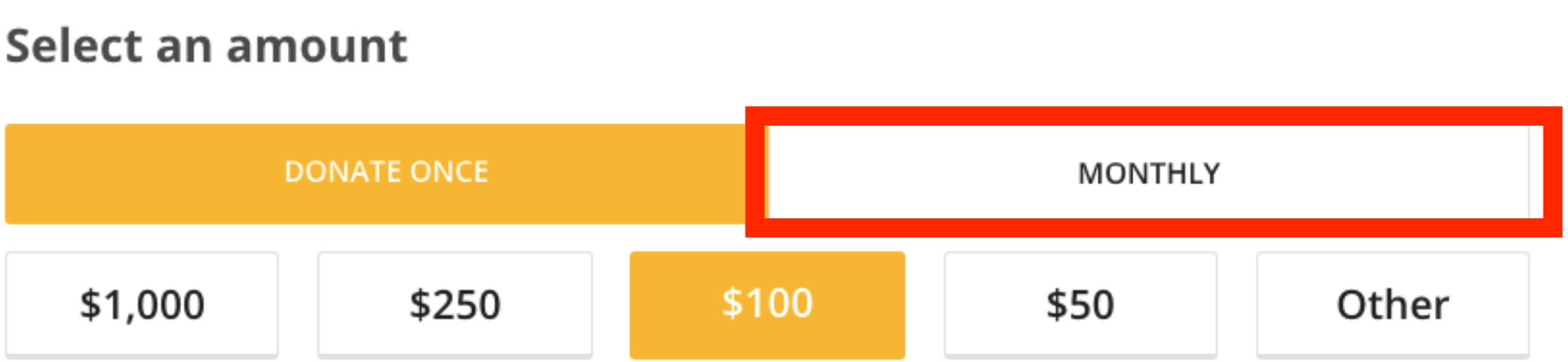


Topic: Recurring Donors

Question #2: How can we get more people to become recurring donors?

A

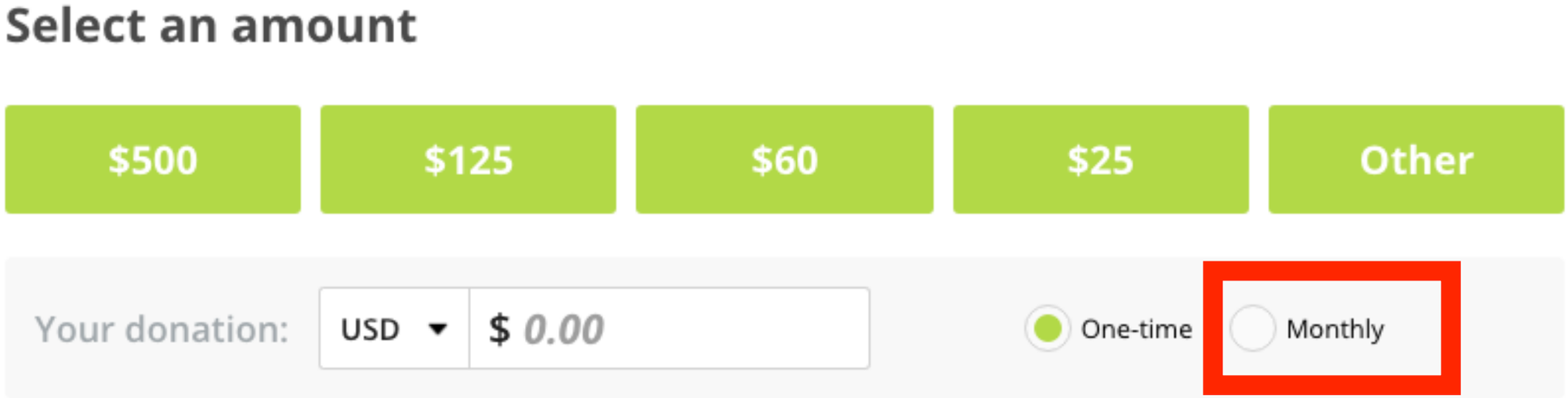




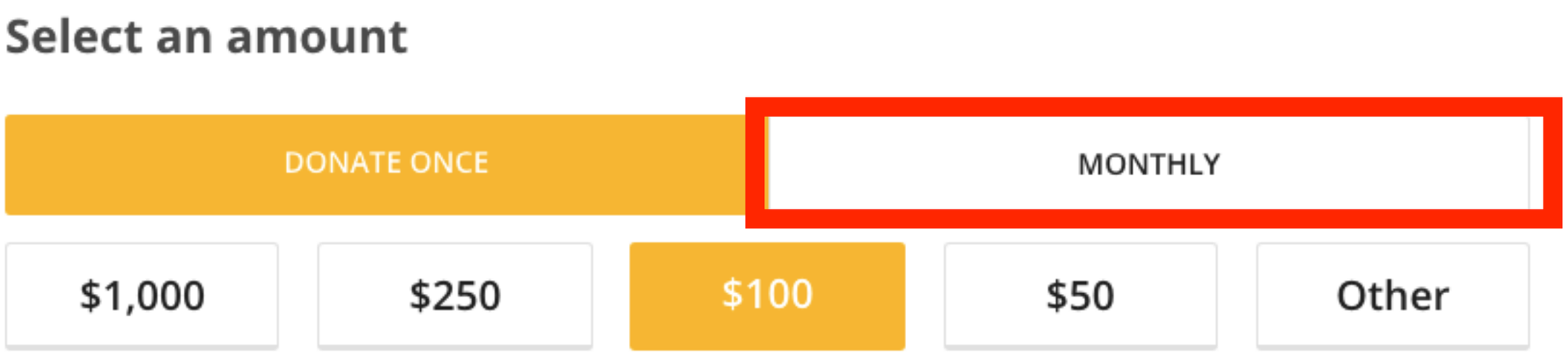
Topic: Recurring Donors

Question #2: How can we get more people to become recurring donors?

A



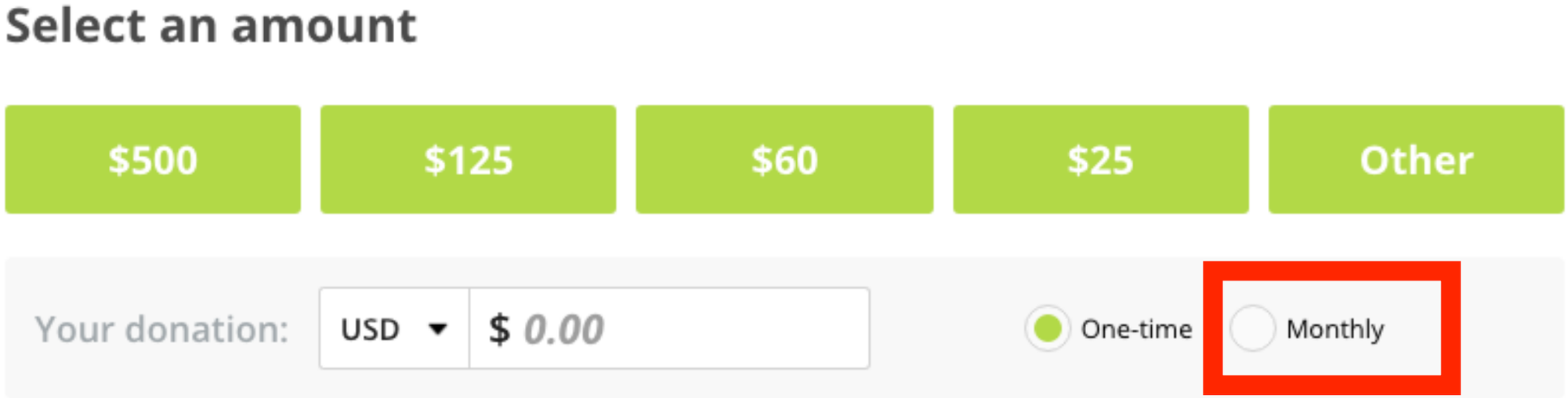
B



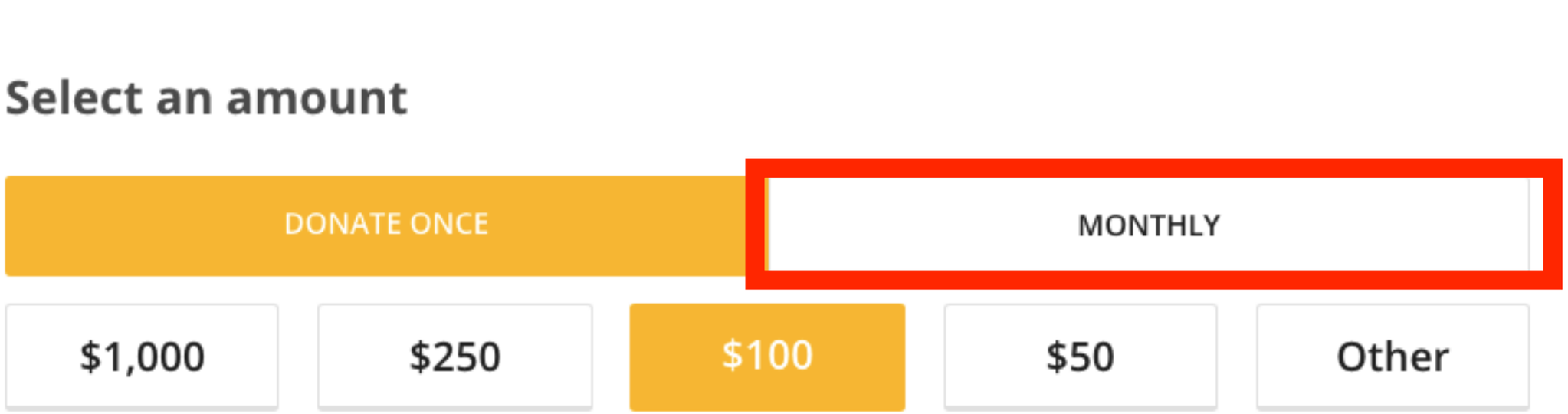
Topic: Recurring Donors

Question #2: How can we get more people to become recurring donors?

A



B



Topic: Recurring Donors

Question #2: How can we get more people to become recurring donors?

What Data Science Skills Were Needed?

Topic: Recurring Donors

Question #2: How can we get more people to become recurring donors?

What Data Science Skills Were Needed?

Topic: Recurring Donors

Question #2: How can we get more people to become recurring donors?

What Data Science Skills Were Needed?

Topic: Recurring Donors

Question #2: How can we get more people to become recurring donors?

What Data Science Skills Were Needed?

Topic: Recurring Donors

Question #2: How can we get more people to become recurring donors?

What Data Science Skills Were Needed?

experimental design
A/B testing

Topic: Recurring Donors

Question #2: How can we get more people to become recurring donors?

What Data Science Skills Were Needed?

experimental design
A/B testing

communication to stakeholders throughout company

Topic: Recurring Donors

Question #3: Can we predict which donors are mostly likely to stay recurring, or switch to become recurring?

Topic: Recurring Donors

Question #3: Can we predict which donors are mostly likely to stay recurring, or switch to become recurring?

Discuss for 2 Minutes

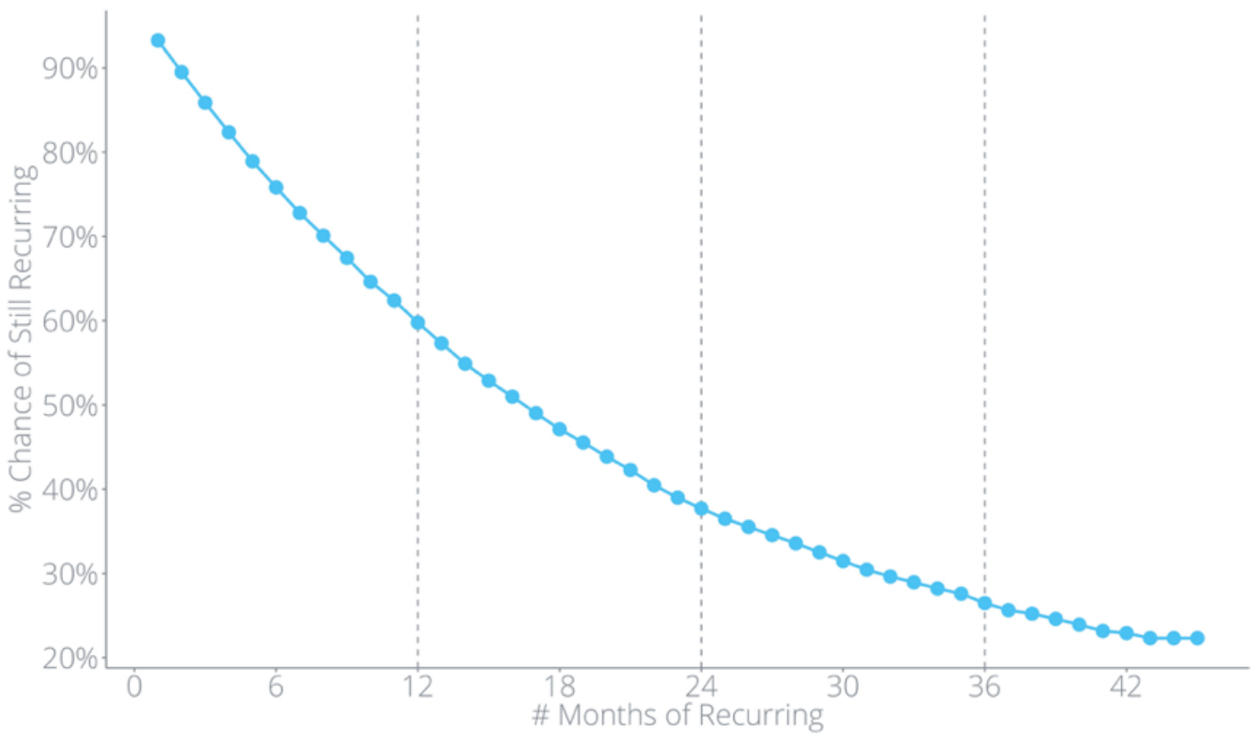
Topic: Recurring Donors

Question #3: Can we predict which donors are mostly likely to stay recurring, or switch to become recurring?

Topic: Recurring Donors

Question #3: Can we predict which donors are mostly likely to stay recurring, or switch to become recurring?

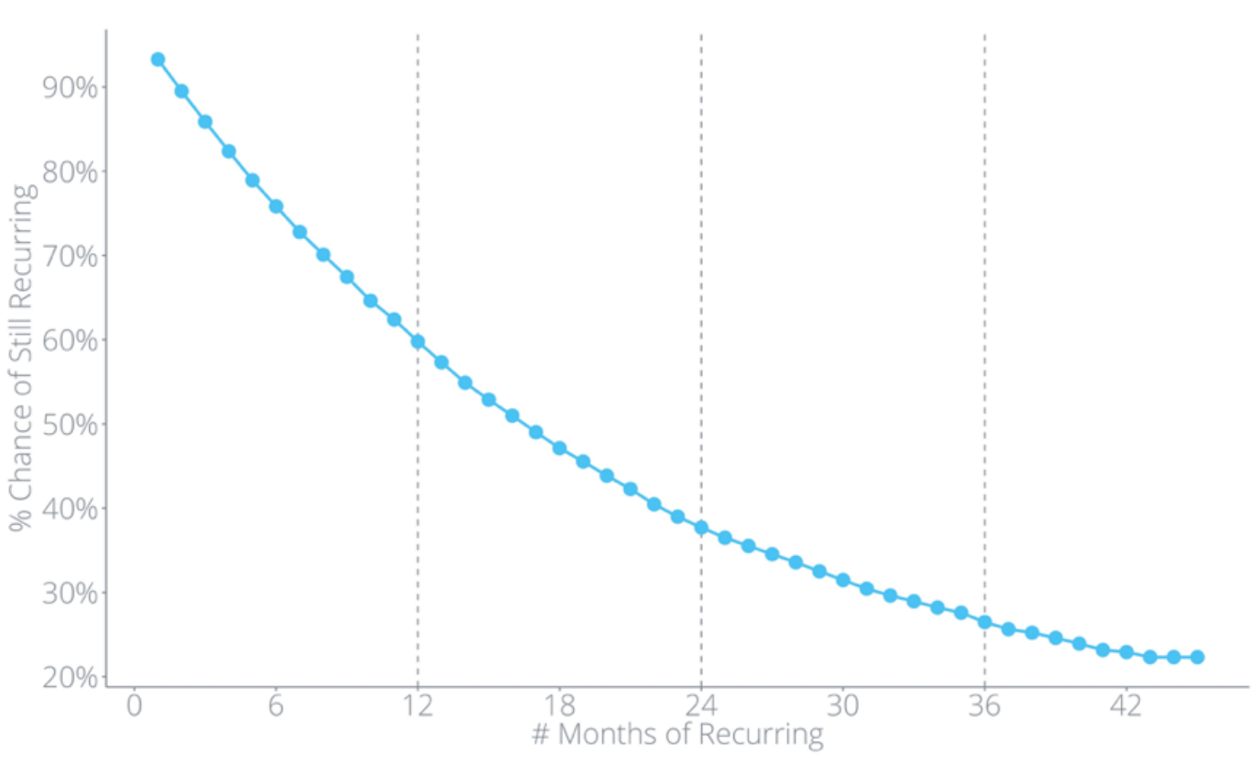
Donor Churn
(supervised)



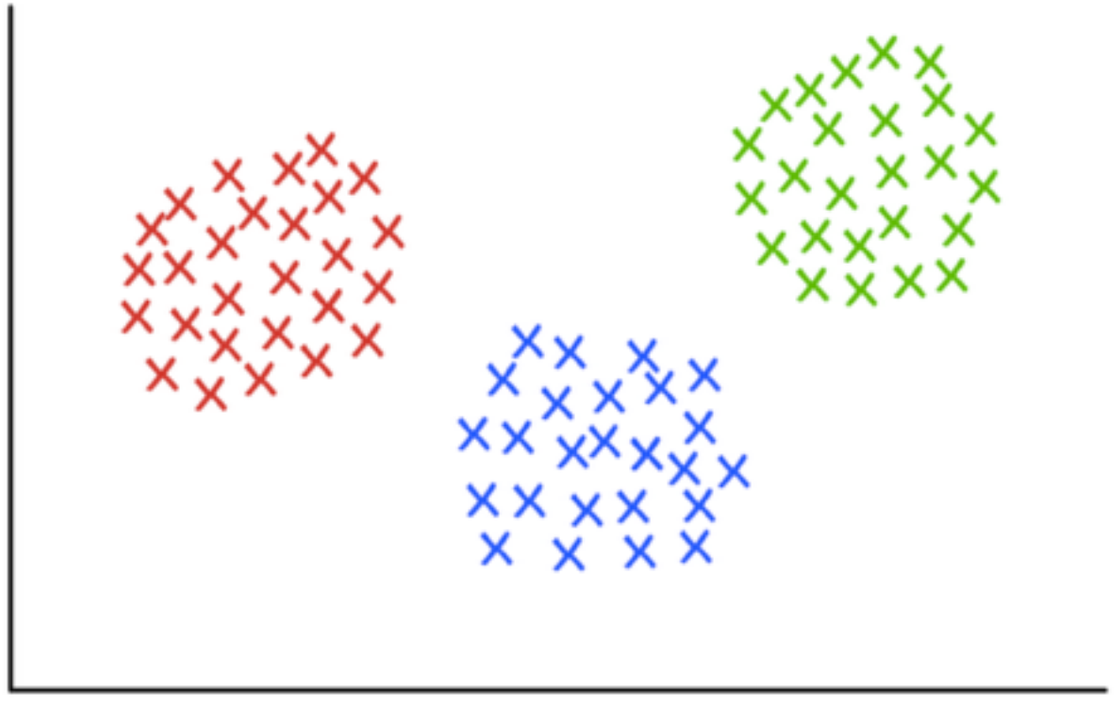
Topic: Recurring Donors

Question #3: Can we predict which donors are mostly likely to stay recurring, or switch to become recurring?

Donor Churn (supervised)



Donor Clustering (unsupervised)



Topic: Recurring Donors

Question #3: Can we predict which donors are mostly likely to stay recurring, or switch to become recurring?

What Data Science Skills Were Needed?

Topic: Recurring Donors

Question #3: Can we predict which donors are mostly likely to stay recurring, or switch to become recurring?

What Data Science Skills Were Needed?

Topic: Recurring Donors

Question #3: Can we predict which donors are mostly likely to stay recurring, or switch to become recurring?

What Data Science Skills Were Needed?

Topic: Recurring Donors

Question #3: Can we predict which donors are mostly likely to stay recurring, or switch to become recurring?

What Data Science Skills Were Needed?

machine learning

Topic: Recurring Donors

Question #3: Can we predict which donors are mostly likely to stay recurring, or switch to become recurring?

What Data Science Skills Were Needed?

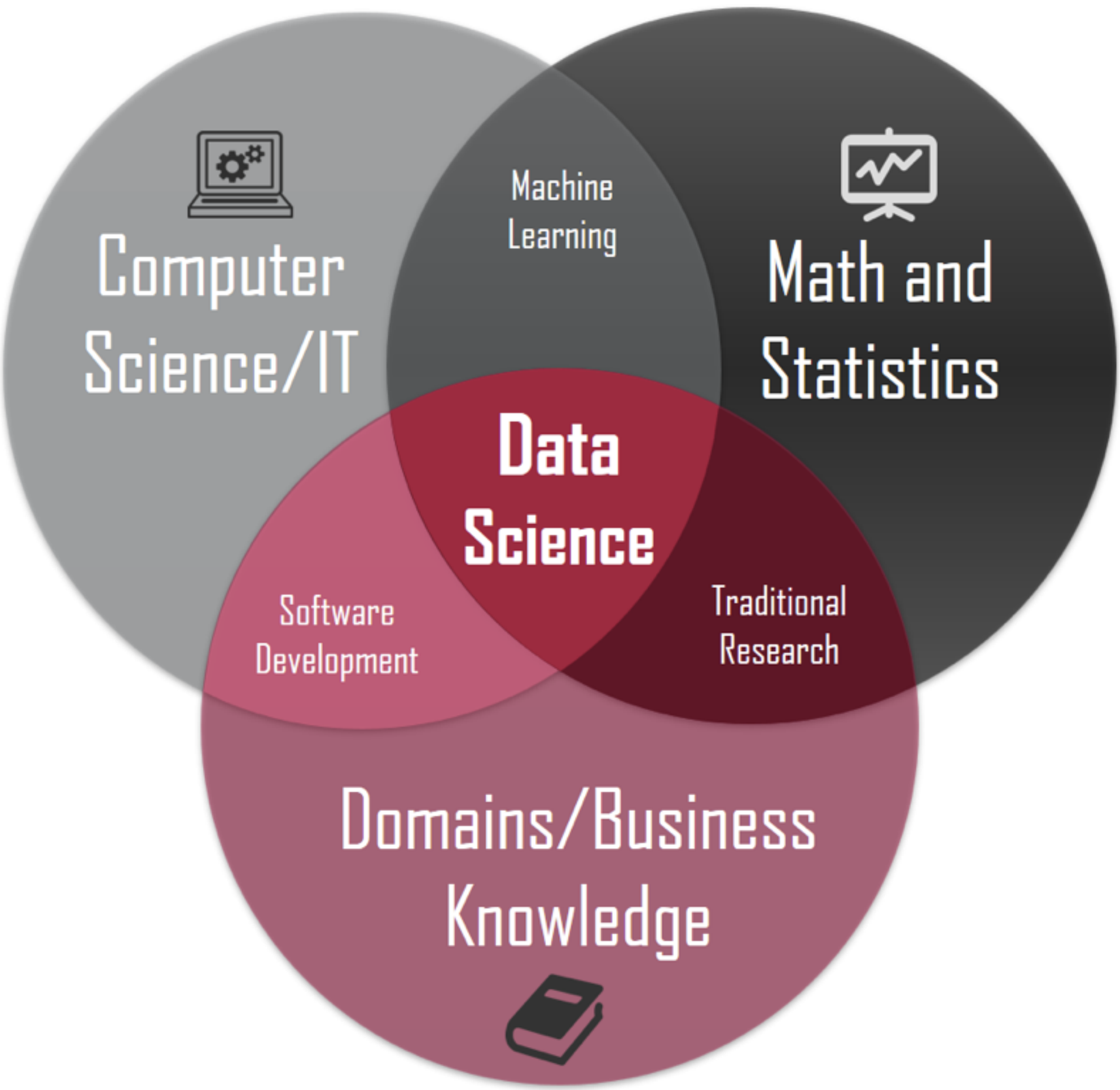
machine learning

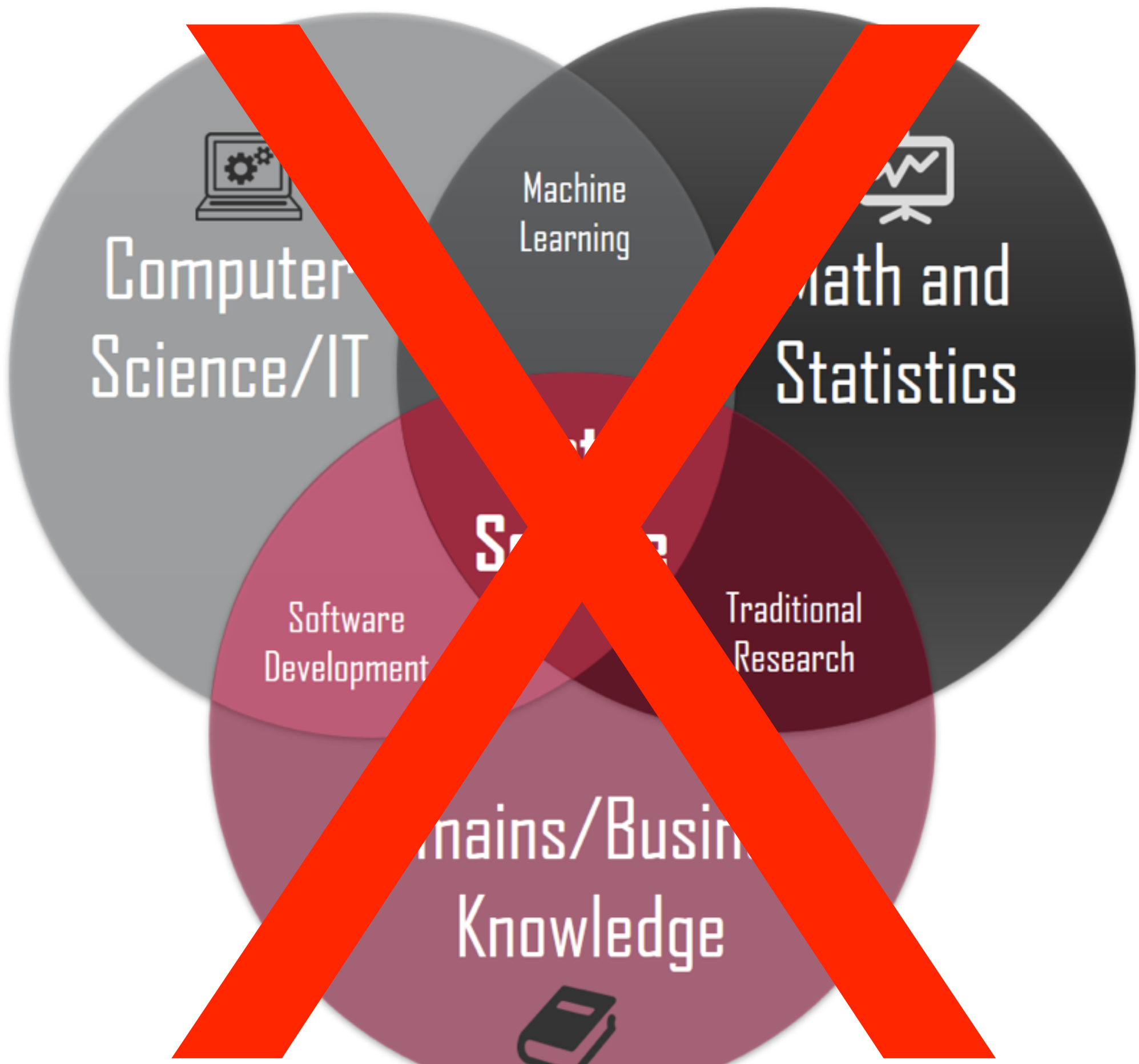
communicate results
to marketing, sales,
account managers

How to Get a Job in Data Science *

How to Get a Job in Data Science *

* One person's opinion


Computer Science/IT
Machine Learning
Math and Statistics
Data Science
Software Development
Traditional Research
Domains/Business Knowledge


Machine
Learning
Computer
Science/IT
ath and
Statistics
Software
Development
Traditional
Research
ains/Busin
Knowledge

Programming

Programming

Storytelling

Programming	Storytelling	Networking

Programming	Storytelling	Community Engagement

Programming

Storytelling

Community Engagement

Programming

Storytelling

Community Engagement

Programming

Storytelling

Community Engagement

Programming

Storytelling

team reporting

Community Engagement

Programming

Storytelling

team reporting

sharing results with product managers

Community Engagement

Programming

Storytelling

team reporting

sharing results with product managers

sharing results across departments

Community Engagement

Programming

Storytelling

team reporting

sharing results with product managers

sharing results across departments

public facing blog posts

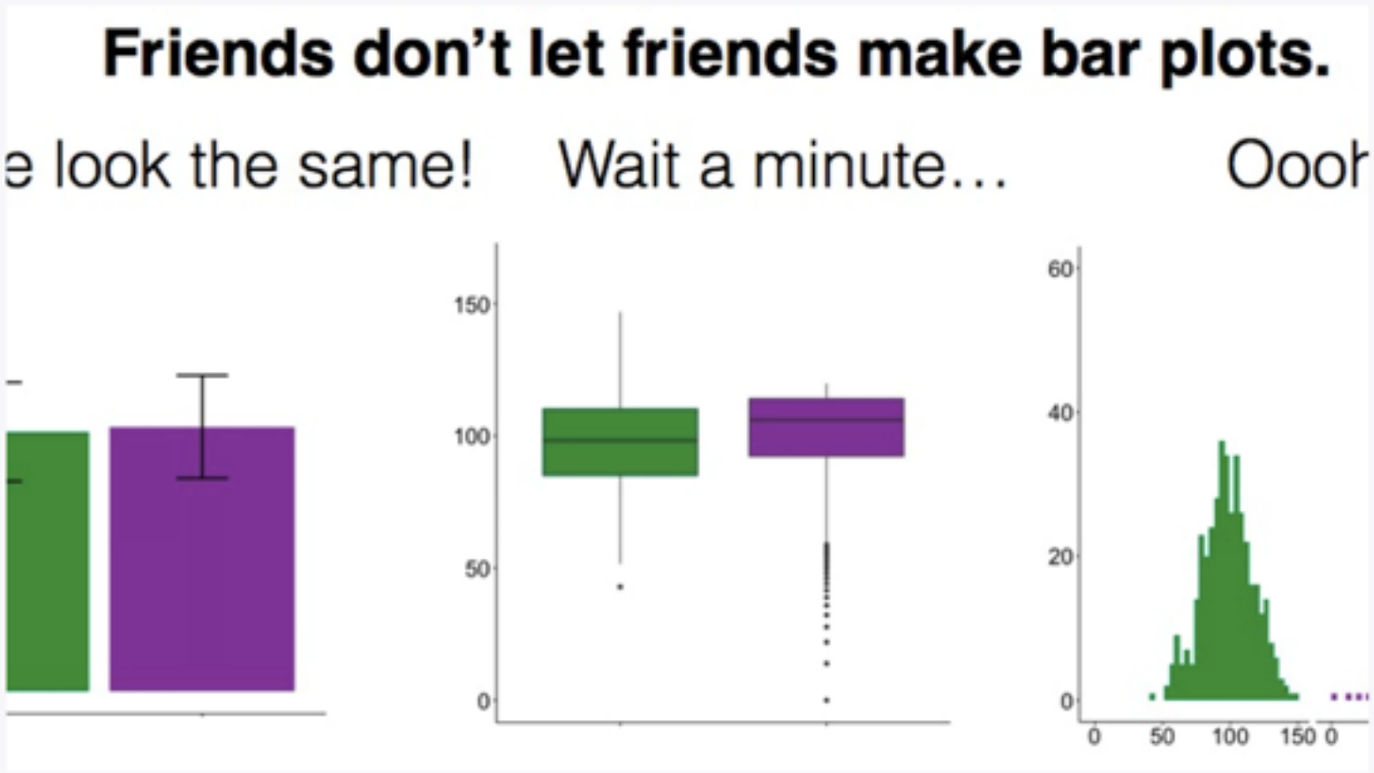
Community Engagement

#barbarplots by Bar Bar Plots

https://www.kickstarter.com/projects/1474588473/barbarplots

Explore Start a project KICKSTARTER Search Sign in

#barbarplots



Bar plots fail to accurately represent the spread of data. Help us get the word out to journal editors to #barbarplots with t-shirts!

Created by

Bar Bar Plots

173 backers pledged €3,479 to help bring this project to life.

Campaign FAQ 4 Updates 5 Comments 10 Community

Programming

Storytelling

team reporting

sharing results with product managers

sharing results across departments

public facing blog posts

Community Engagement

Programming

Storytelling

team reporting

sharing results with product managers

sharing results across departments

public facing blog posts

Community Engagement

Programming

Storytelling

team reporting

sharing results with product managers

sharing results across departments

public facing blog posts

Community Engagement

Programming

Storytelling

team reporting

sharing results with product managers

sharing results across departments

public facing blog posts

Community Engagement

Programming

Storytelling

team reporting

sharing results with product managers

sharing results across departments

public facing blog posts

Community Engagement

Page's Top Recommendations for Getting a Job in Data Science

Page's Top Recommendations for Getting a Job in Data Science

1. Learn SQL.

Page's Top Recommendations for Getting a Job in Data Science

1. Learn SQL.

2. Use personal interests or hobbies to think of data science projects.

Page's Top Recommendations for Getting a Job in Data Science

1. Learn SQL.

2. Use personal interests or hobbies to think of data science projects.
3. Push that code up to GitHub.

Page's Top Recommendations for Getting a Job in Data Science

1. Learn SQL.

2. Use personal interests or hobbies to think of data science projects.
3. Push that code up to GitHub.
4. Write up the results of those projects as blog posts.

Page's Top Recommendations for Getting a Job in Data Science

1. Learn SQL.

2. Use personal interests or hobbies to think of data science projects.
3. Push that code up to GitHub.
4. Write up the results of those projects as blog posts.
5. Advertise your blog posts on social networks.

Page's Top Recommendations for Getting a Job in Data Science

1. Learn SQL.

2. Use personal interests or hobbies to think of data science projects.
3. Push that code up to GitHub.
4. Write up the results of those projects as blog posts.
5. Advertise your blog posts on social networks.

6. Go to meetups.

Page's Top Recommendations for Getting a Job in Data Science

1. Learn SQL.

2. Use personal interests or hobbies to think of data science projects.
3. Push that code up to GitHub.
4. Write up the results of those projects as blog posts.
5. Advertise your blog posts on social networks.

6. Go to meetups.
7. Present at a meetup.

Page's Top Recommendations for Getting a Job in Data Science

1. Learn SQL.

2. Use personal interests or hobbies to think of data science projects.
3. Push that code up to GitHub.
4. Write up the results of those projects as blog posts.
5. Advertise your blog posts on social networks.

6. Go to meetups.
7. Present at a meetup.

8. Talk to other data scientists!

Thank You!

Questions?

And thanks to The Noun Project for
many of the images in this presentation.