

CharityChooser

Kristy Simmons

Insight Health Data Science

Summer 2015

I want to donate to a cancer charity that's pretty new and doesn't get a lot of contributions...

...but maybe you want to give to a more established charity.

Web News Images Videos Shopping More Search tools

About 324,000 results (0.51 seconds)

Many deadly cancers underfunded: report | CTV News

www.ctvnews.ca/too-many-deadly-cancers-go-underfunded-r-... CTV News

Apr 26, 2011 - Too many deadly cancers go underfunded: report. CTV.ca ... (The figures exclude funding to general cancer research or charities.) In other ...

Childhood Cancer Facts - Flashes of Hope

flashesofhope.org/funding.../childhood-cancer-facts Flashes of Hope

The average age of death for a child with cancer is 8 years old. Surviving childhood ... Pediatric cancer research is severely underfunded. Childhood cancer ...

TargetCancer Foundation | Funding Innovative Rare Cancer ...

www.targetcancerfoundation.org/

We fund innovative rare cancer research. ... to slide 4. Save the date for the 6th Annual TargetCancer Foundation Gala. ... A new clinical trial opens to patients.

Deadliest cancers in research funding gap: report - Health ...

www.cbc.ca/news/.../deadliest-cancers-in-research-funding-gap-re-... CBC.ca

Apr 26, 2011 - Some of the deadliest cancers in Canada are underfunded relative to ... toll in lives taken, according to a new report on cancer-specific charities.

So, where does the money go: Childhood Cancer Research ...

curechildhoodcancer.ning.com/forum/.../so-where-does-the-money-go

Jul 15, 2010 - 11 posts - 11 authors

NATIONAL CANCER INSTITUTE: it's your tax dollars at work. Over the Dr. Peter Adamson discuss the new COG Foundation and funding ...

Metastatic Breast Cancer Alliance Report Finds Research ...

www.ascopost.com/.../metastatic-breast-cancer-alliance-report-finds-resea-...

Nov 15, 2014 - Metastatic Breast Cancer Alliance Report Finds Research for the Disease Is Underfunded, Details ... In October, the newly formed Metastatic Breast Cancer Alliance ... cancer charities, advocacy groups, and pharmaceutical companies, ... of the incidence of metastatic breast cancer (232,670 new cases of ...

Kure It Cancer Research

www.kureit.org/

General information

Charities that might match

CHARITY SEARCH

enter charity name, keywords, or EIN

☐ Name Only

SEARCH

[Advanced](#) | [A-Z Directory](#)

Charity Directory

[A - Z Directory](#)[4 Star Charities](#)[New Ratings](#)[New Charities](#)[Browse Categories](#)[Donor Advisories](#)[CN Watchlist](#)[Interactive World Map](#)[Advanced Search](#)

Advanced Search

Keywords / Charity Name

cancer

☐ Name Only

EIN (Employer Identification Number)

Select Category/Cause:

Health

All

Location:

☒ State and/or City:

All

☐ Zip Code:

in this vicinity: this ZIP only

Additional Search Fields: (available to registered users)

Overall Rating:

All

Size (Total Expenses):

up to \$3.5M

CEO Salary

All

Donor Privacy Policy

☐ Yes

Scope of Work

☒ All ☐ Regional ☐ National ☐ International

Combined Federal Campaign (CFC) Charity

☐

Receives \$0 in government support

☐

Has Results Reporting Data

☐

SUBMIT

Rated Organizations (73)

Unrated Organizations (100+)

Results 1 - 20 of 73

« 1 2 3 4 »

Click on a charity's name to view their complete rating report.

Sort by: [Name](#) | [Rating](#) | [City](#)☐ Compare

Accelerate Brain Cancer Cure

★★★★☆
DETAILS >

Fight for a cure!

LOCATION: Washington, DC

CATEGORY: Health

CAUSE: Medical Research

Accelerate Brain Cancer Cure

Fight for a cure!

Add to My Charities

Donate to this charity

Print

SHARE



Current Rating

[History](#)[IRS \(Forms 990\)](#)[Comments \(1\)](#)

Overall

Score
(out of 100)Rating
FYE 12/2013

74.91

★★★★☆

Financial

66.27

★★★☆☆

Accountability & Transparency

89.00

★★★★☆

DEMO

www.kristinadsimmons.com/charitychooser

Data



- BBB accreditation
- Year founded
- Board size
- Staff size
- Tax-exempt status



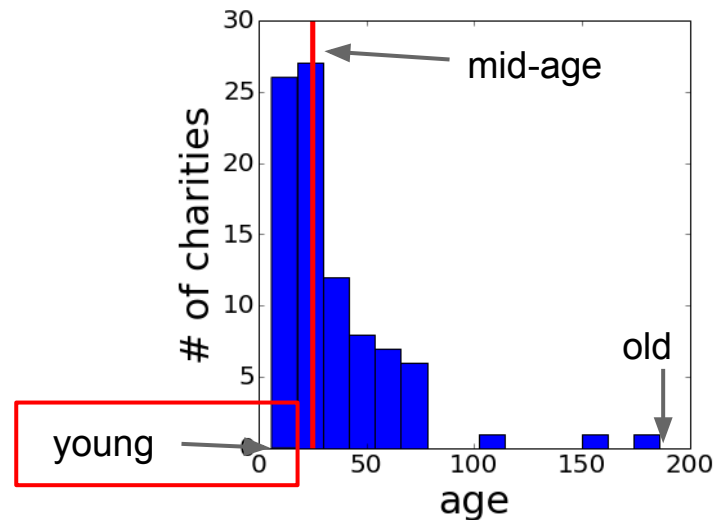
- Number of Twitter followers



- Overall score
 - Financial
 - Accountability and transparency
- Total expenses
- Total contributions
- Breakdown of expenses
 - Program
 - Administration
 - Fund-raising

Database and features

- 880 organizations
- 36 diseases
- Ranked using 17 features
- “Ideal” charity constructed from user input and feature distributions



Charity rankings

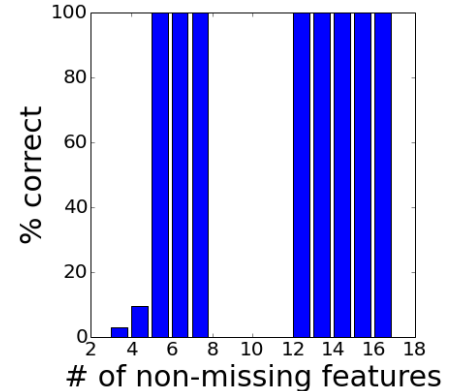
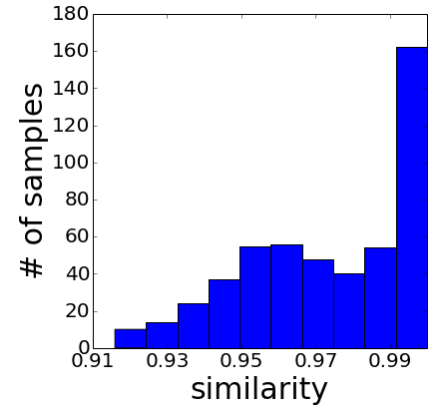
- Compare each organization to the ideal one
- **Challenge:** combination of binary and numerical data

- **Solution:** Gower similarity
- Compute similarity on each feature:
 - binary: agree or disagree
 - numerical: absolute difference
- Combine to get global similarity
- Choose up to 10 top charities

feature	ideal	actual	similarity
tax-exempt	yes	yes	1
age	6	24	--
normalized age	0	0.1	0.9
	Total		0.95

Validation

- **How close are my recommendations to the input charity?**
 - Similarity of 0.9+
- **If I put in a specific charity's features, does my algorithm recommend that charity?**
 - If target has 5+ non-missing features: 100%



About me...



The Neuroscience Graduate Group



DEPARTMENT OF SURGERY



Choose a type of charity to look for (required):

Disease:

Find charities!

Select additional preferences (optional):

State:

Tax-exempt:

BBB accredited:

Charity Navigator rating:

Company age:

Size of staff:

Size of board:

Total contributions:

Total expenses:

Percent of budget spent on programming:

Twitter followers:

Find charities!

chronos@localhost:/ x CharityChooser x KristySimmonsInsightD x

← → ↻ 🏠

kristinadsimmons.com/input

🔍 ☆ 🖨️ ⚠️ 🔴 📄 💬 🌐 ☰

CharityChooserHomeAboutContactSlides

Choose a type of charity to look for (required):

Disease:

cancer

Find charities!

Select additional preferences (optional):

State:

No preference ▾

Tax-exempt:

Yes ▾

BBB accredited:

Yes ▾

Charity Navigator rating:

Yes ▾

Company age:

Young ▾

Size of staff:

No preference ▾

Size of board:

No preference ▾

Total contributions:

No preference ▾

Total expenses:

No preference ▾

Percent of budget spent on programming:

No preference ▾

Twitter followers:

No preference ▾

Find charities!

🔍 🌐 📧 💬 📁 📍 📅 📌 🏠

0 5:37 🔴 📶 🖱️ 🖼️

chronos@localhost/

CharityChooser

KristySimmonsInsightD

← → ↻ 🏠

kristinadsimmons.com/output?disease=cancer&state=&tax_exempt=1&bbb_accred=1&cn_rated=1&age=1&staff_size=0&board_size=0&total_contributions=0&total_expenses=0&percent_program=0&twitter_follow

🔍 ⭐ 🖨️ 📱 📺 📧 📞 📧 📧 📧

CharityChooser

Home

About

Contact

Slides

Recommended charities with a focus on cancer:

More information

Rank	Name		Address	City
1	Pancreatic Cancer Action Network	Donate	1500 Rosecrans Avenue, Suite 200	Manhattan Beach, CA 90266
2	Breast Cancer Research Foundation	Donate	60 East 56th Street,	8th Floor
3	ZERO: The End of Prostate Cancer	Donate	515 King Street Suite 420	Alexandria, VA 22314
4	Ovarian Cancer Research Fund	Donate	14 Pennsylvania Plaza, Suite 1710	New York, NY 10122
5	Uniting Against Lung Cancer		27 Union Square West	Suite 304
6	Pediatric Cancer	Donate	5550 West Executive Dr.	Suite 300

🔍 🌐 📧 🗺️ 📁 📅 🏠 📧

0 5:38 📶 🗑️ 🖱️ 🖱️

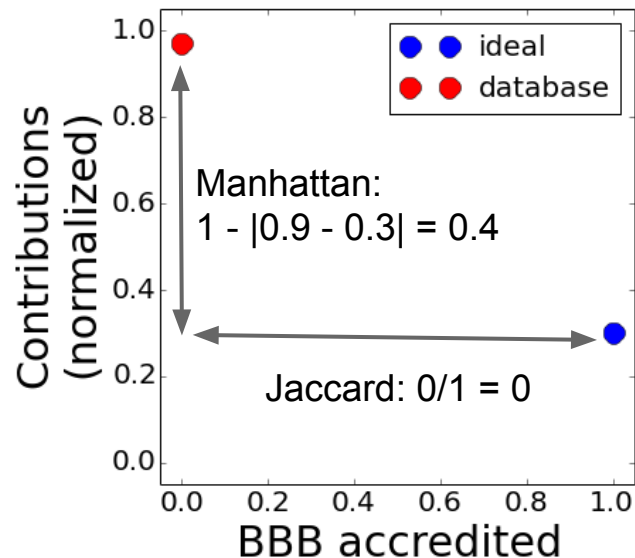
Recommended charities with a focus on cancer:

		More information	Less information	Charity Navigator Scores								Breakdown of Budget						
Rank	Name		Address	City	Tax-exempt?	BBB Accredited?	Overall	Financial Health	Accountability and Transparency	Year Founded	Staff Size	Board Size	Total Contributions	Total Expenses	Program	Administrative	Fund-raising	Twitter Followers
1	Pancreatic Cancer Action Network	Donate	1500 Rosecrans Avenue, Suite 200	Manhattan Beach, CA 90266	Yes	Yes	96.84	95.54	100.00	1999	104	7	\$23,168,567	\$20,555,919	80.4%	9.6%	9.9%	--
2	Breast Cancer Research Foundation	Donate	60 East 56th Street,	8th Floor	Yes	Yes	95.89	94.19	100.00	1993	25	13	\$55,890,938	\$66,418,878	91.9%	2.4%	5.5%	9,616
3	ZERO: The End of Prostate Cancer	Donate	515 King Street Suite 420	Alexandria, VA 22314	Yes	Yes	94.58	92.34	100.00	1996	20	13	\$47,781,593	\$46,376,704	98.4%	0.7%	0.8%	5,943
4	Ovarian Cancer Research Fund	Donate	14 Pennsylvania Plaza, Suite 1710	New York, NY 10122	Yes	Yes	93.82	91.27	100.00	1994	12	9	\$7,642,696	\$8,633,550	86.2%	6.3%	7.3%	5,000
5	Uniting Against Lung Cancer		27 Union Square West	Suite 304	Yes	Yes	89.76	85.53	100.00	2002	8	11	\$3,027,879	\$2,799,727	78.7%	7.2%	13.9%	1,504
6	Pediatric Cancer Foundation	Donate	5550 West Executive Dr.	Suite 300	Yes	Yes	90.70	86.85	100.00	1991	7	24	\$1,767,485	\$1,600,434	78.6%	5.6%	15.7%	6,148
7	Prostate Cancer Foundation	Donate	1250 Fourth Street	Santa Monica, CA 90401	Yes	Yes	94.53	93.38	96.00	1993	34	27	\$50,028,788	\$45,650,436	83.8%	5.5%	10.5%	6,720
8	Cancer		One	55 Broadway Suite	Yes	Yes	95.76	94.01	100.00	1993	18	37	\$16,472,823	\$18,585,045	83.2%	7.6%	9.1%	11,384

Charity rankings (old)

- Compare each organization to the ideal one
- **Challenge:** combination of binary and numerical data

- **Solution:** Gower similarity
- Compute similarity on each feature and combine
- Binary data:
 - Jaccard similarity coefficient
- Numerical data:
 - 1 - Manhattan distance



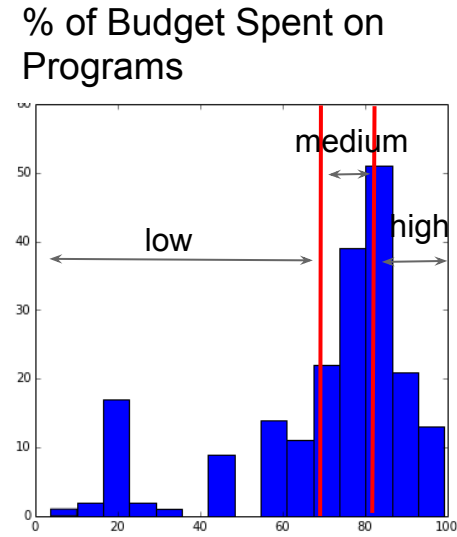
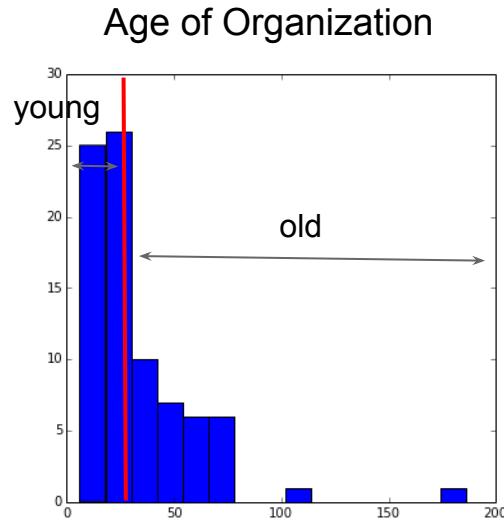
$$\text{Gower similarity} = (0.4 + 0)/(1 + 1) = 0.2$$

Charity rankings

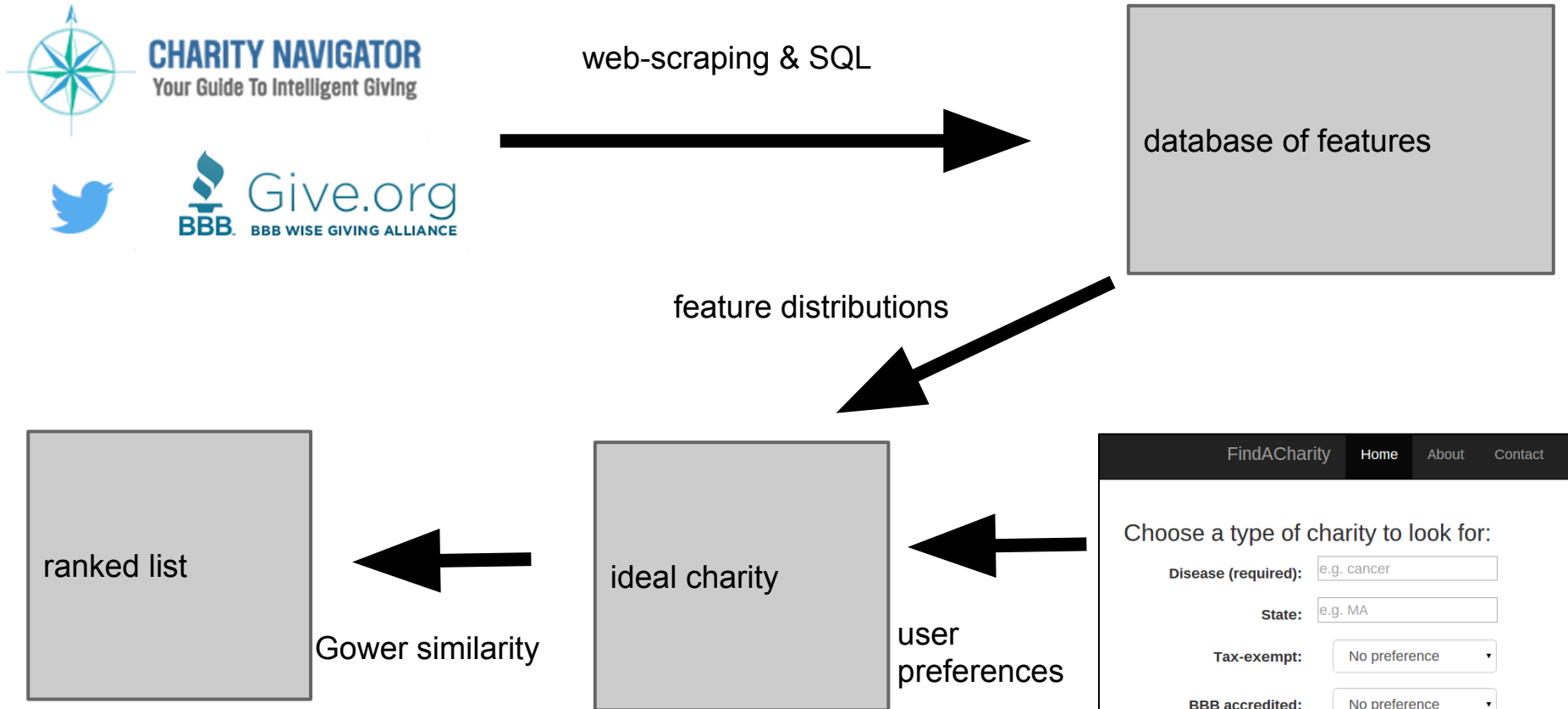
- Compare each organization to the ideal one
- **Challenge:** combination of binary and numerical data
- Solution: Gower similarity
 - Compute similarity on each feature and combine
 - 1 - Manhattan distance for numerical data
 - $s = 1 - \text{abs}(x_{\text{data}} - x_{\text{ideal}})$
 -
 - Jaccard similarity coefficient for binary data
 - $s = 1$ if $x_{\text{data}} = 1$ and $x_{\text{ideal}} = 1$
 - $s = 0$ if $x_{\text{data}} = 1$ xor $x_{\text{ideal}} = 1$
 - $s = \text{NaN}$ if $x_{\text{data}} = 0$ and $x_{\text{ideal}} = 0$
- Return up to 10 most similar charities

Database and features

- **772 organizations**
 - 117 (15%) accredited by Better Business Bureau
 - 203 (26%) reviewed by Charity Navigator



Algorithm



Keywords:

Search



Organization Name/Location

Organization Name:

Organization Details

City:

State:

(To select multiple choices, hold Ctrl and click with mouse.)

All
Alabama
Alaska
American Samoa
Arizona
Arkansas

Categories:

(To select multiple choices, hold Ctrl and click with mouse.)

Service and Other
Zoos and Veterinary Services
Health (All)
Addiction and Substance Abuse
Diseases and Disease Research
Health Care Facilities and Programs

NTEE Code:

(To select multiple choices, hold Ctrl and click with mouse.)

All
A Arts, Culture, and Humanities
A01 Alliance/Advocacy Organizations
A02 Management & Technical Assistance
A03 Professional Societies, Associations
A05 Research Institutes and/or Public Policy Anal

Income:

You may use a 'k' for thousands, an 'm' for millions, or a 'b' for billions (e.g., 120k, 3.5M, etc.)

Between and [Donate to GuideStar](#)Welcome to GuideStar! [Sign Out](#)[Update Nonpr](#)

Search GuideStar

[Advanced Search](#)
[Refine Your Search](#)[Organiza](#)[Home](#) > Search ResultsYour search for **cancer** produced 4,378 results.

Viewing 1 - 25 of 1,000 results

Related Keywords: [prostate cancer research](#), [ovarian cancer research](#), [of the lung cancer research](#), [lung cancer research](#), [cancer research](#) ... [more >](#)

Bear Necessities
PEDIATRIC CANCER FOUNDATION
bearnecessities.org

Bear Necessities Pediatric Cancer Foundation

AKA Bear Necessities PCFI
Chicago, IL

Summary

Financials

Forms 990 &
DocsPeople &
Governance

Programs

Impact

External
Perspectives

GuideStar Summary



Your search for **cancer** returned 49 results.

Search

Location

City and state or zip code

☒ Accredited

Search

CATEGORY SEARCH

Charity - American Indian
Charity - Animal Protection
Charity - Arts & Culture
Charity - Blind & Visually Impaired
Charity - Cancer
Charity - Child Sponsorship
Charity - Children & Youth
Charity - Civil Rights
Charity - Community Development &

CHARITY

DISTANCE

Colorectal Cancer Coalition
aka **C3: Colorectal Cancer Coalition**
1414 Prince Street, Suite 204
Alexandria, VA 22314

[Click here to view the full report](#)

Category: **Cancer**

CureSearch for Children's Cancer

aka **National Childhood Cancer Foundation**
4600 East West Highway, Suite 600
Bethesda, MD 20814

[Click here to view the full report](#)

Category: **Cancer**

Uniting Against Lung Cancer

27 Union Square West
Suite 304
New York, NY 10003

[Click here to view the full report](#)

Category: **Cancer**

American Cancer Society

250 Williams Street NW

Conclusion

Purpose

Programs

Governance & Staff

Fund Raising

Tax Status

Financial

The following information is based on the ACS' audited financial statements for the fiscal year ending August 31, 2010.

Source of Funds

Contributions	302,652,000
Legacies and bequests	43,893,000
Contributed services, merchandise and other in-kind contributions (at fair value)	21,328,000
Exchange transactions, net	13,360,000
Investment income	6,569,000
Grants and contracts	5,697,000
Other revenue	2,839,000
Change in value of split-interest agreements	39,000
Loss on disposal of fixed assets	-259,000
Total Income	\$396,118,000

Conclusion

Purpose

Programs

Governance & Staff

Fund Raising

Tax Status

Financial

Year, State Incorporated: 1913, New York

Validation

- **Does my algorithm rank organizations correctly?**
 - Unlabeled data
 - Not clear how to define “correct”
- **If I rank two charities similarly, do people tend to give to both?**
 - No data that I could find to check this
- **How close are my recommendations to the ideal charity?**
 - Could measure this using random input
 - Uses the same algorithm to produce results and to validate
- **If I put in a specific charity’s features, is that charity the top recommendation?**
 - Could measure this systematically
 - Assumes that features are chosen and coded reasonably