

INVESTIGATING THE EFFECT OF ATTRIBUTES ON USER TRUST IN SOCIAL MEDIA

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Outline

- Introduction
 - Research Issue
 - need
- Background
 - Use Case
 - Proposed Solution
- Approach
 - Solution Evaluation
- Results
- Further Work

Introduction: Situation

- Growing of social media
 - Developing of communication
 - Internet and devices availability
 - Diversity of social media
 - Entertainment, but Investment, medicine etc.
- Changing the source and the way we receive information
 - One-to-Many to Many-to-Many

Introduction: Issue

- How do you deal with information provided before you consume it?
- What do you need to know about a statement for making a decision?
 - Who is the author
 - Role, reputation etc.
 - Others' experience
 - Review, comments etc.

Introduction: Issue

- What does “Consuming” mean?
- It is an activity that is triggered by a human-merit
- This activity indicates the process that so called trust
- This process supports an entity in taking a critical decision based on a given information

Introduction: Need

- We now need a formula that classifies a given information in terms of trust.
- Trust is a human-merit recognized by activities.
- There is a lot of information and many activities in social media. A representative of these social media is Genius.

I am happy to join with you today in what will go down in history as the greatest demonstration for freedom in the history of our nation.

Five score years ago, a great American, in whose symbolic shadow we stand today, signed the Emancipation Proclamation. This momentous decree came as a great beacon light of hope to millions of Negro slaves who had been seared in the flames of withering injustice. It came as a joyous daybreak to end the long night of their captivity.

But one hundred years later, the Negro still is not free. One hundred years later, the life of the Negro is still sadly crippled by the manacles of segregation and the chains of discrimination. One hundred years later, the Negro lives on a lonely island of poverty in the midst of a vast ocean of material prosperity. One hundred years later, the Negro is still languishing in the corners of American society and finds himself in exile in his own land. So we have come here today to dramatize a shameful condition.

In a sense we have come to our nation's capital to cash a check. When the architects of our republic wrote the magnificent words of the Constitution and the Declaration of Independence, they were signing a promissory note to which every American was to

Genius Annotation 4 contributors

1	 Steven Frölke	30,757	48%
2	 Liz Fosslien	57,989	27%
3	 Perfectrhyme	176,390	19%
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Created by [DOZ The Slacker](#) 7 years ago



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Refers to the August 28, 1963 March on Washington, in which an estimated 250,000 people participated. King's words were prophetic: the March continues to be one of the largest rallies for human rights in US history.

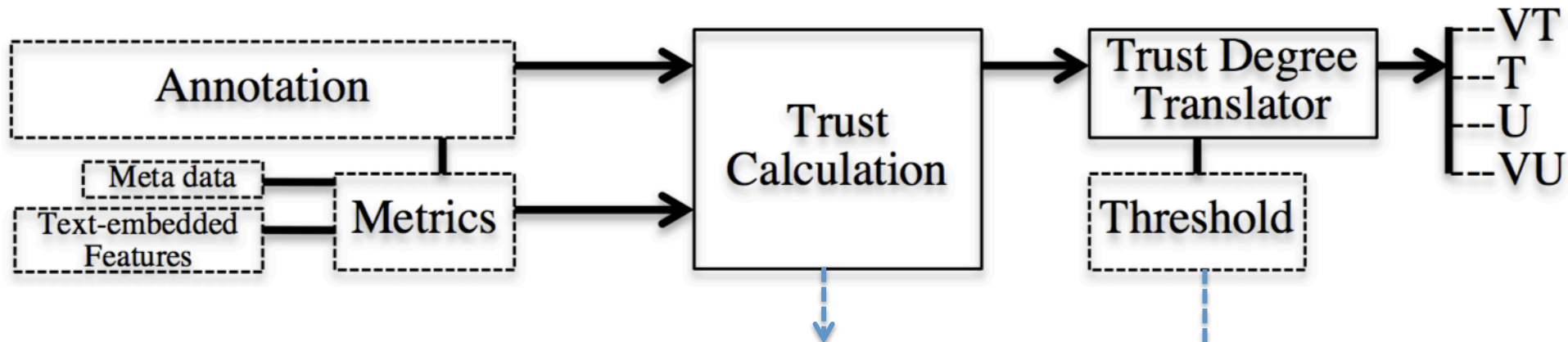


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Suggest an improvement to earn IQ

Background: Prop. Solution



$$trust = \alpha \times stability + \beta \times credibility + \gamma \times quality$$

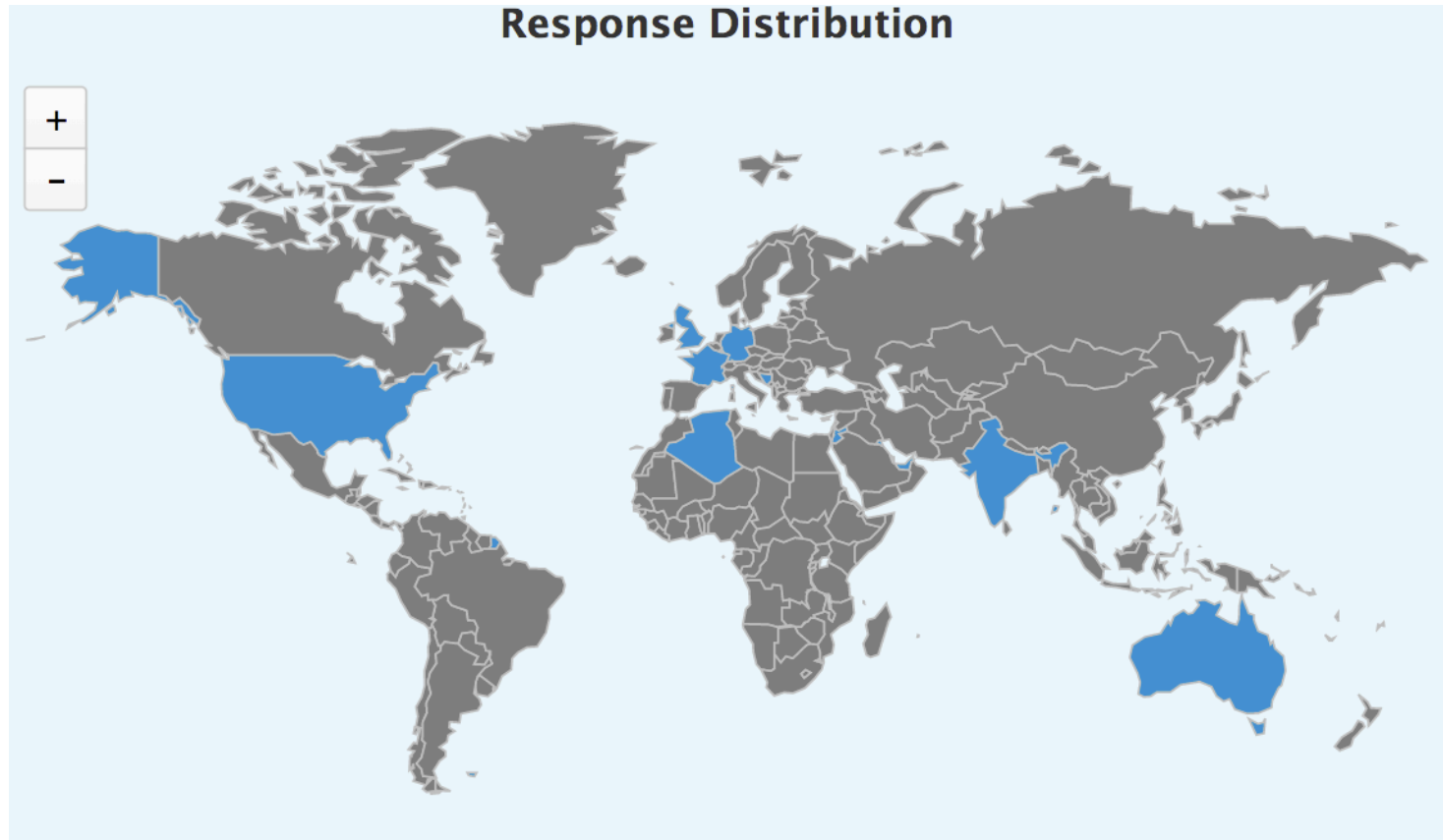
- $\alpha = \beta = \gamma = \frac{1}{3}$
- Stability: number of edits
- Credibility: reader–review
- Quality: author–review

Trust Value (ω)	Trust Class
$\omega \geq 15$	Very Trusted (VT)
$15 > \omega \geq 13.5$	Trusted (T)
$13.5 > \omega \geq 12$	Untrusted (U)
$\omega < 12$	Very Untrusted (VU)

Approach: Conjoint Analysis

- Discrete Choice Conjoint approach (DCC) is applied
 - A design task, in which respondents repeatedly select one concept
 - Fractional Factorial Design ($\frac{1}{2}$)
 - Every web user can participate

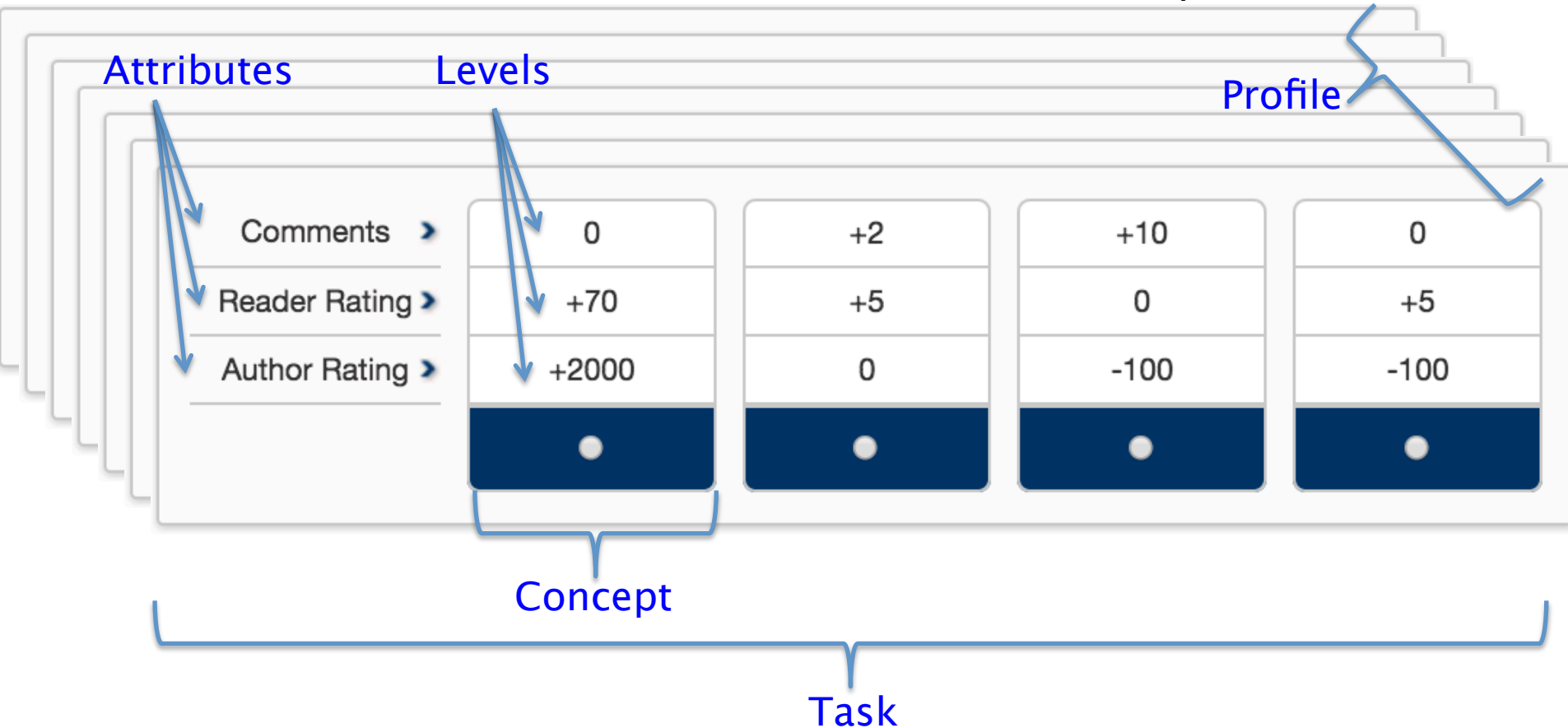
Approach: Resp. Distribution



Approach: Survey

Full profile: $4^3 = 64$ combination

Fractional Factorial: $64/2 = 32$ concepts



Approach: Example

- The process running for calculating the attributes relative importance

Attribute	Level	selected	rel. Importance
Comment	0	2	29%
	2	33	
	5	44	
	10	62	
Reader Rating	0	5	33%
	10	24	
	30	39	
	70	72	
Author Rating	-100	1	39%
	0	7	
	1000	52	
	2000	80	

- Attribute: statement's property
- Level: one possible attribute' value
- Selected: selection frequency
- relative Importance: attribute's preference

Approach: Example

- The process running for calculating the attributes relative importance

- relative Importance:

$$I_{rel.} = \frac{S_{al_{max}} - S_{al_{min}}}{\sum_{a=1}^A (S_{al_{max}} - S_{al_{min}})} \times 100\%$$

a: attribute, l:level, S: selected

- Example

- a: comment

Attribute	Level	selected	rel. Importance
Comment	0	2	29%
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	70	72	
Author Rating	-100	1	39%
	0	7	
	1000	52	
	2000	80	

$$I_c = \frac{62 - 2}{(62 - 2) + (72 - 5) + (80 - 1)} \times 100\% \approx 29\%$$

Results

Evaluation

Author Rating (quality)		Reader Rating (credibility)		Comments (stability)	
40.85%		34.8%		24.35%	
Level	Utility	Level	Utility	Level	Utility
-100	-0.90	0	-0.82	0	-0.67
0	-0.39	+5	-0.18	+2	-0.04
+1000	+0.44	+30	+0.29	+5	+0.24
+2000	+0.86	+70	+0.71	+10	+0.47

$$trust = \alpha \times stability + \beta \times credibility + \gamma \times quality$$

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Trust Model

Trust Degree	Percentage	Edits number	Edits IQ	User IQ
vt	25%	>5	>35	>1000
t	43.75%	2 to 5	5 to 35	0 to 1000
u	6.25%	0 to 2	0 to 5	-100 to 0
vu	37.5%	<0	<0	<-100



Further work

- (Short text) annotation's insights
 - Reconstruct the classification based on:
 - Text-embedded features using
 - Natural-Language-Processing for
 - Syntactic and semantic analysis as
 - » Part-of-Speech
 - » Readability Indexes

Thanks!!!