Contextual Ads

as the New Frontier in Privacy Compliant Advertising

Contents

Current digital advertising landscape - what's at stake?

How can Machine Learning in contextual advertising contribute to addressing privacy concerns?

Travel Ad

Picks advertisers (IcelandAir) who wants to show travel ad

Proposal of a cookie (tracking users across web) to show an ad?

Ad platform receives the category signal Example: Travel

Analyze texts

ML Predicts the category it belongs

What is the impact in terms of dollars ?

"..the Interactive Advertising Bureau estimates publishers' exposure at up to
$10 billion in lost revenue without third party **cookies**.." Source: IAB
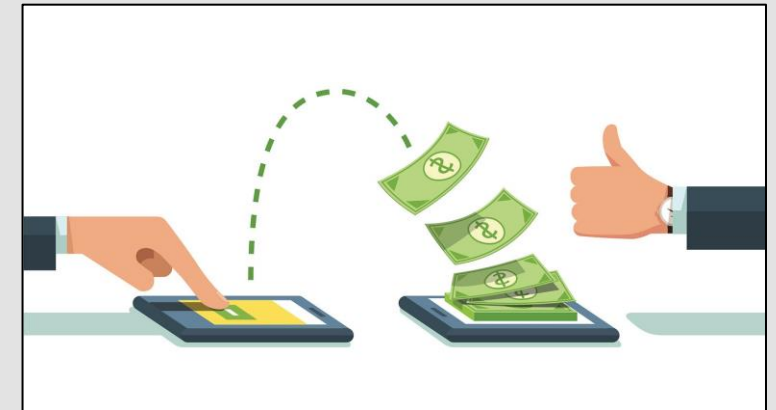
Impact of our proposed solution

Users seeing relevant ads

Advertisers will gain high ROI

Publishers sell more ads

What's our data - how does it look like?

This dataset contains around 210,000 news headlines from 2012 to 2022 from HuffPost.

209,527 rows & 6 columns

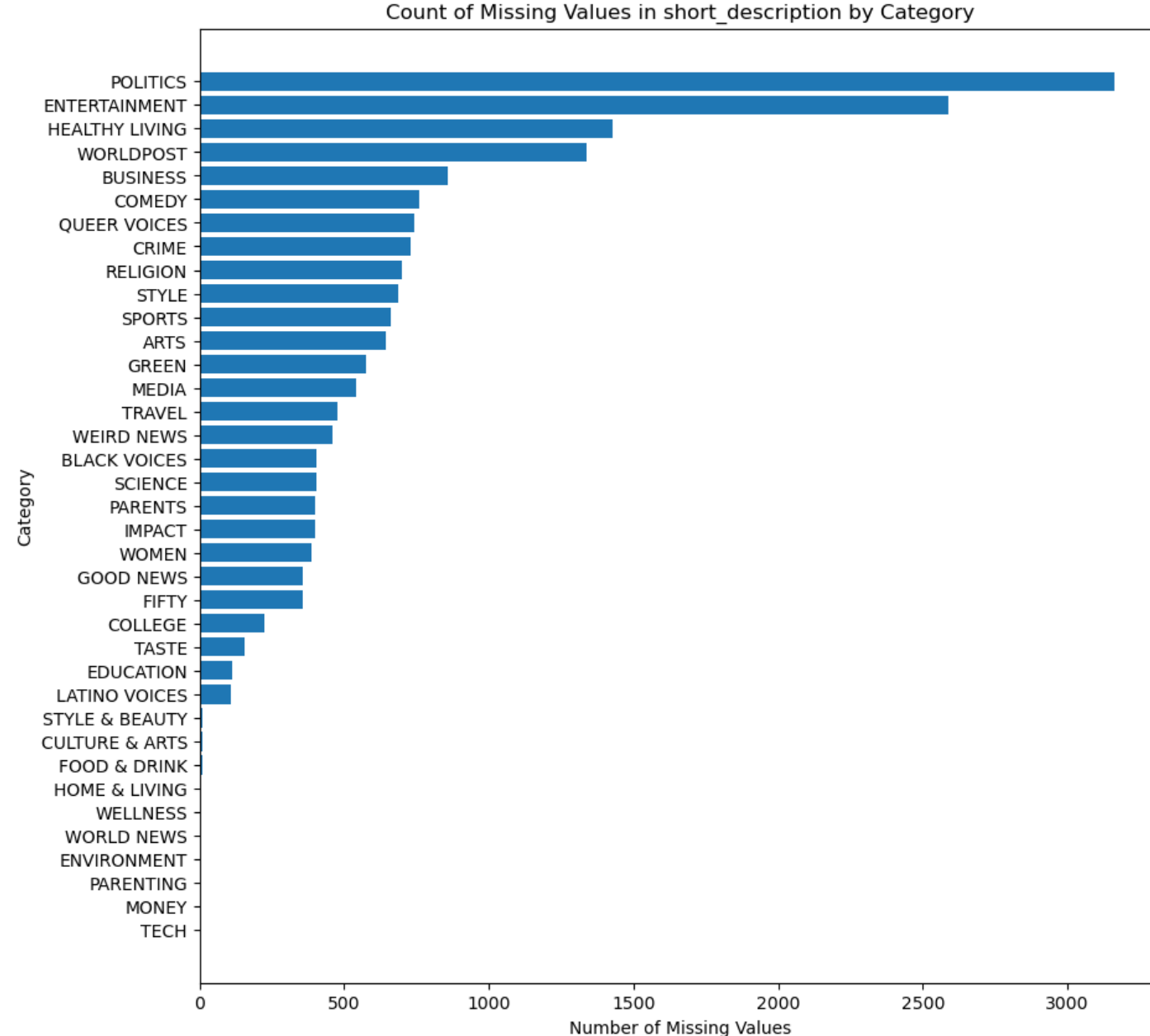| link	headline	category	short_description	authors	date
https://www.huffpost.com/entry/covid-boosters-...	Over 4 Million Americans Roll Up Sleeves For O...	U.S. NEWS	Health experts said it is too early to predict...	Carla K. Johnson, AP	2022-09-23
https://www.huffpost.com/entry/american-airlin...	American Airlines Flyer Charged, Banned For Li...	U.S. NEWS	He was subdued by passengers and crew when he ...	Mary Papenfuss	2022-09-23
https://www.huffpost.com/entry/funniest-tweets...	23 Of The Funniest Tweets About Cats And Dogs ...	COMEDY	"Until you have a dog you don't understand wha...	Elyse Wanshel	2022-09-23
https://www.huffpost.com/entry/funniest-parent...	The Funniest Tweets From Parents This Week (Se...	PARENTING	"Accidentally put grown-up toothpaste on my to...	Caroline Bologna	2022-09-23
https://www.huffpost.com/entry/amy-cooper-lose...	Woman Who Called Cops On Black Bird-Watcher Lo...	U.S. NEWS	Amy Cooper accused investment firm Franklin Te...	Nina Golgowski	2022-09-22
https://www.huffpost.com/entry/belk-worker-fou...	Cleaner Was Dead In Belk Bathroom For 4 Days B...	U.S. NEWS	The 63-year-old woman was seen working at the ...		2022-09-22
https://www.huffpost.com/entry/reporter-gets-a...	Reporter Gets Adorable Surprise From Her Boyfr...	U.S. NEWS	"Who's that behind you?" an anchor for New Yor...	Elyse Wanshel	2022-09-22
https://www.huffpost.com/entry/puerto-rico-wat...	Puerto Ricans Desperate For Water After Hurric...	WORLD NEWS	More than half a million people remained witho...	DÁNICA COTO, AP	2022-09-22
https://www.huffpost.com/entry/mija-documentar...	How A New Documentary Captures The Complexity ...	CULTURE & ARTS	In "Mija," director Isabel Castro combined mus...	Marina Fang	2022-09-22
https://www.huffpost.com/entry/biden-un-russia...	Biden At UN To Call Russian War An Affront To ...	WORLD NEWS	White House officials say the crux of the pres...	Aamer Madhani, AP	2022-09-21

Number of missing values in each variable:

link	0
headline	6
category	0
short_description	19712
authors	37418
date	0
month_num	0
year	0

Percentage missing values in each variable:

link	0.00
headline	0.00
category	0.00
short_description	9.41
authors	17.86
date	0.00
month_num	0.00
year	0.00

Count of Missing Values in short_description by Category

- Advanced EDA

  Example: Understanding top words by category, trends by month/year etc..

- Grouping similar categories.

  Example: "Science" , "Tech" -> 'Science & Tech'

- Data Preparation:

  (i)   Tokenizing, stemming and lemmatization

  (ii) Vectorization

- Exploring Multi-classification Models

Thank You!