CUSTOM CASTS for NETFLIX

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Capstone Presentation

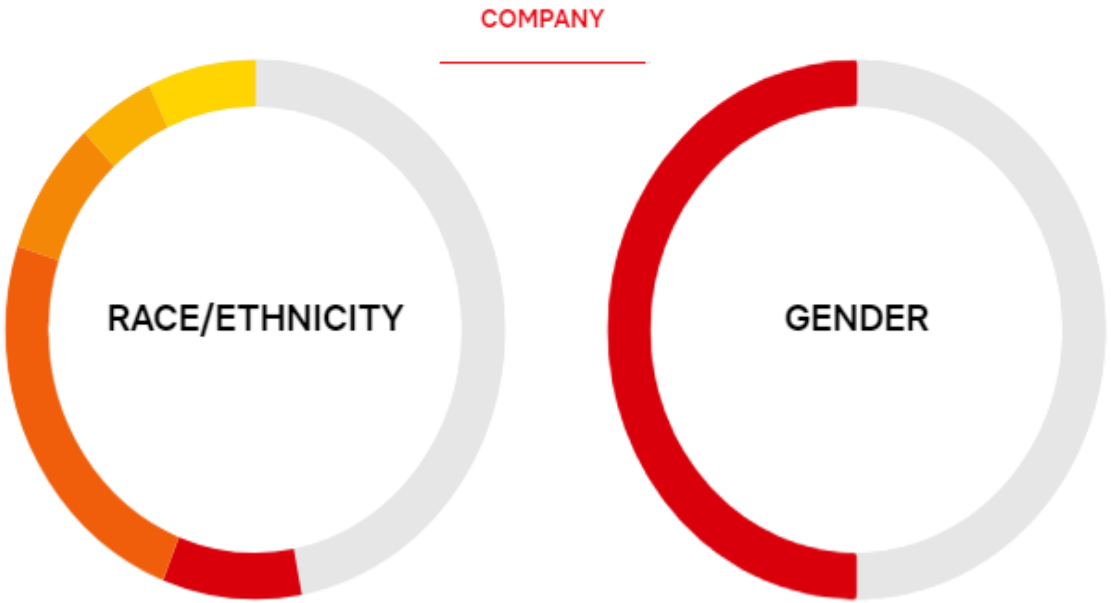
Flatiron School Data Science Cohort 012120

Inclusion & Diversity

IT TAKES **DIVERSITY** OF **THOUGHT**, **CULTURE**, **BACKGROUND**, AND **PERSPECTIVE** TO CREATE A TRULY **GLOBAL STORYTELLING PLATFORM**.

NETFLIX Workforce Demographics Q2 2020

Black
7%
Other / Multiple
5%
Hispanic
8%
Asian
24%
Unidentified
9%
White
47%

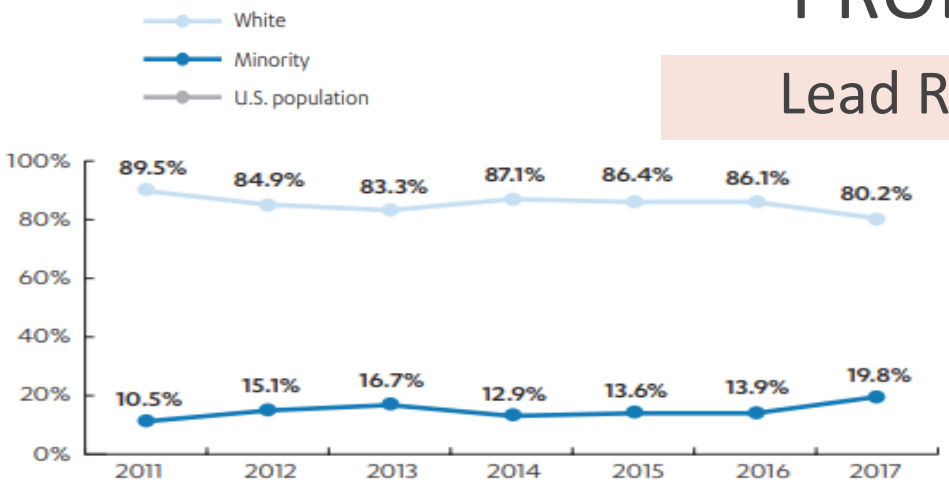


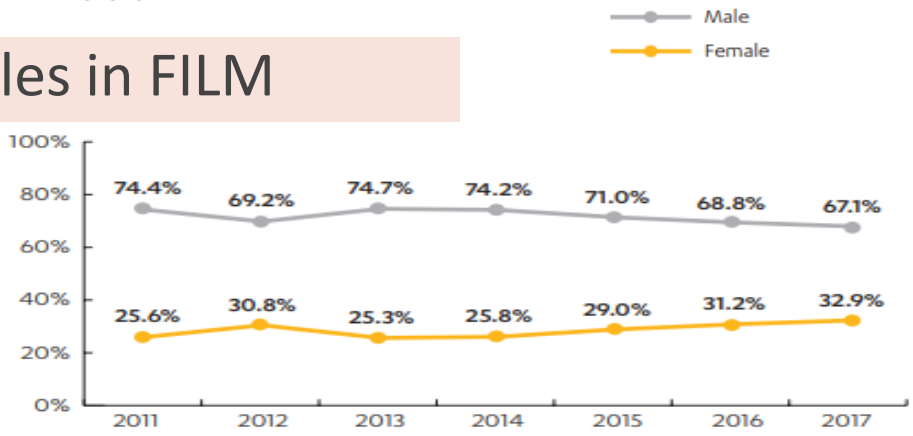
Female
50%
Male
50%

Race/Ethnicity data is US only. Gender is worldwide.

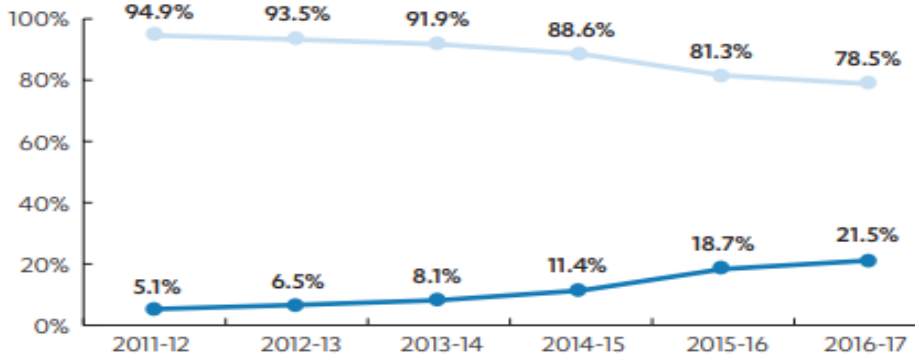
PROBLEM

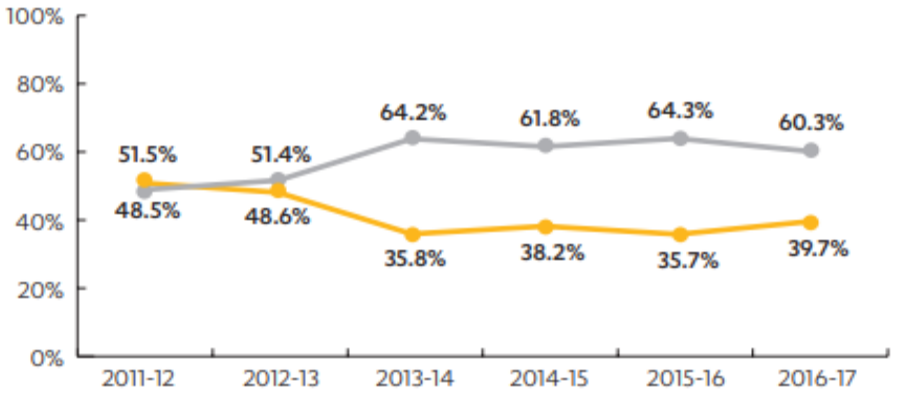
Lead Roles in FILM





Lead Roles in SHOWS





SOLUTION: Custom Casts

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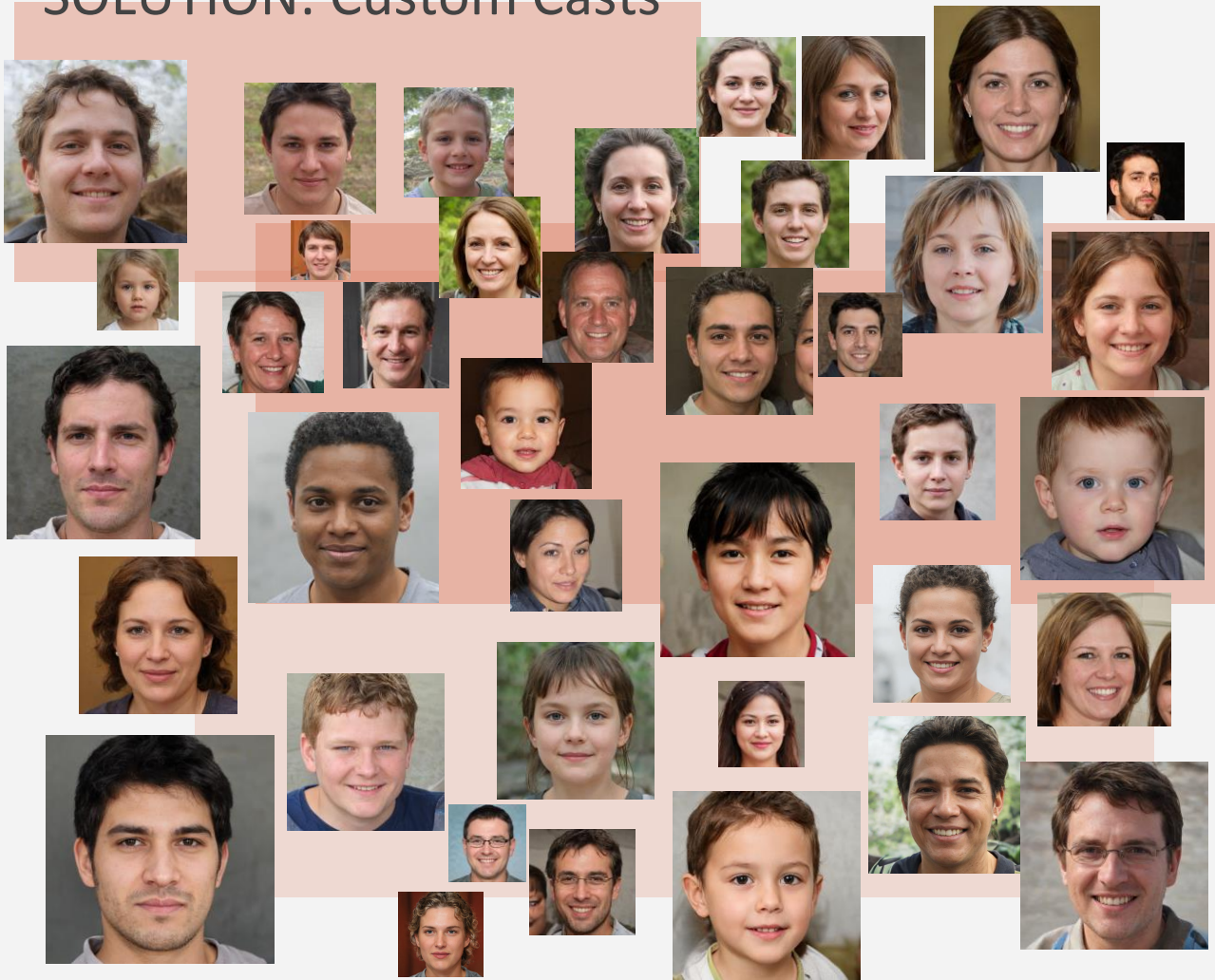
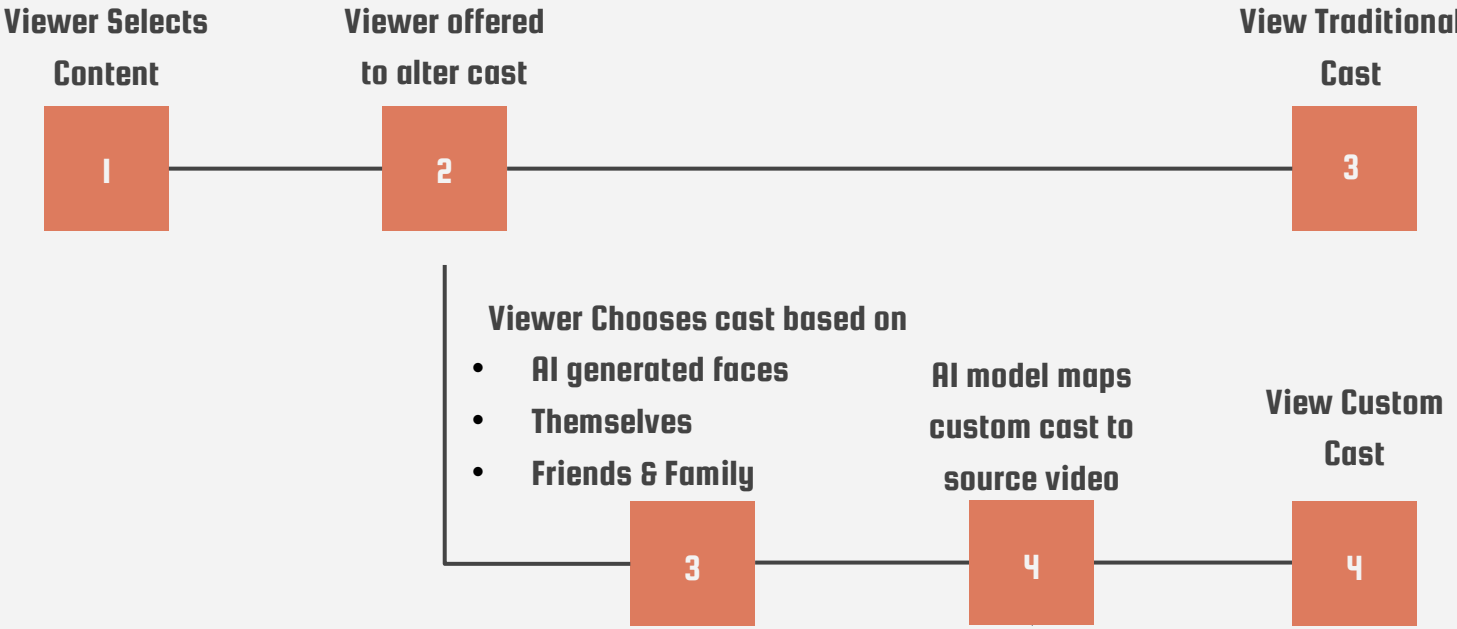
AI Generated Cast Members

With Custom Casts, Netflix can use Artificailly Generated Faces to allow viewers to tailor make the cast for any viewing on the platform, enabling what users view to reflect Netflix's views on diversity.



New Choices with Custom Casts

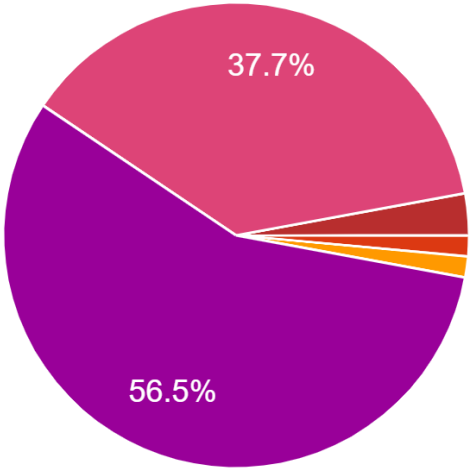
CUSTOM CAST ARCHITECTURE



Public Opinion on Custom Casts

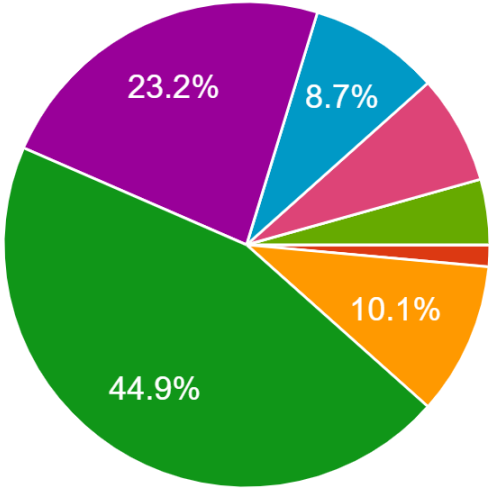
69 Repondents

Gender



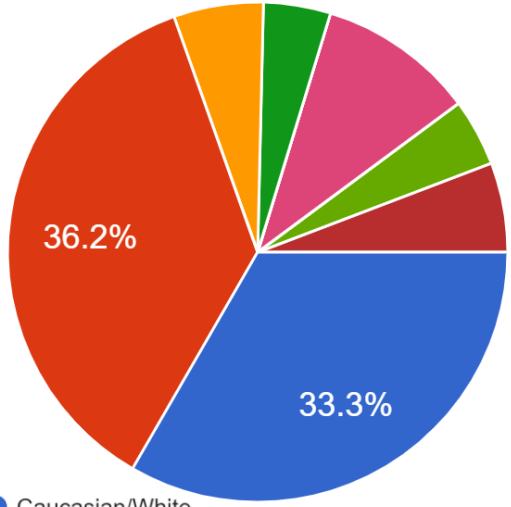
- Agender
- Genderfluid
- Gender non-conforming
- Genderqueer
- Man
- Non-binary
- Woman
- Other
- Prefer not to say

Age



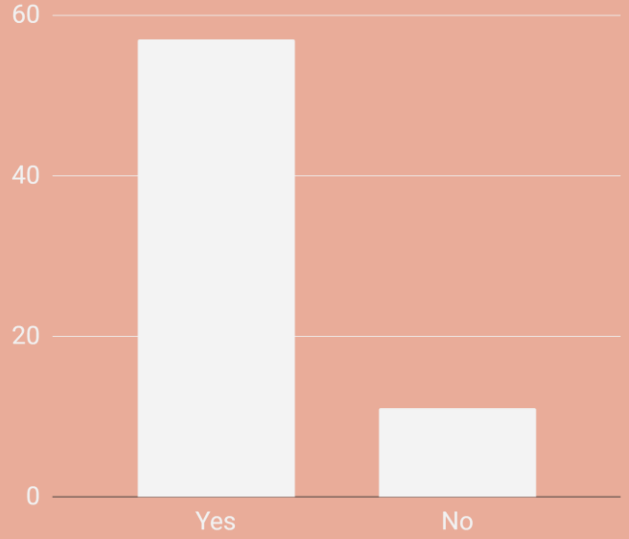
- Under 12 years old
- 12-17 years old
- 18-24 years old
- 25-34 years old
- 35-44 years old
- 45-54 years old
- 55-64 years old
- 65-74 years old

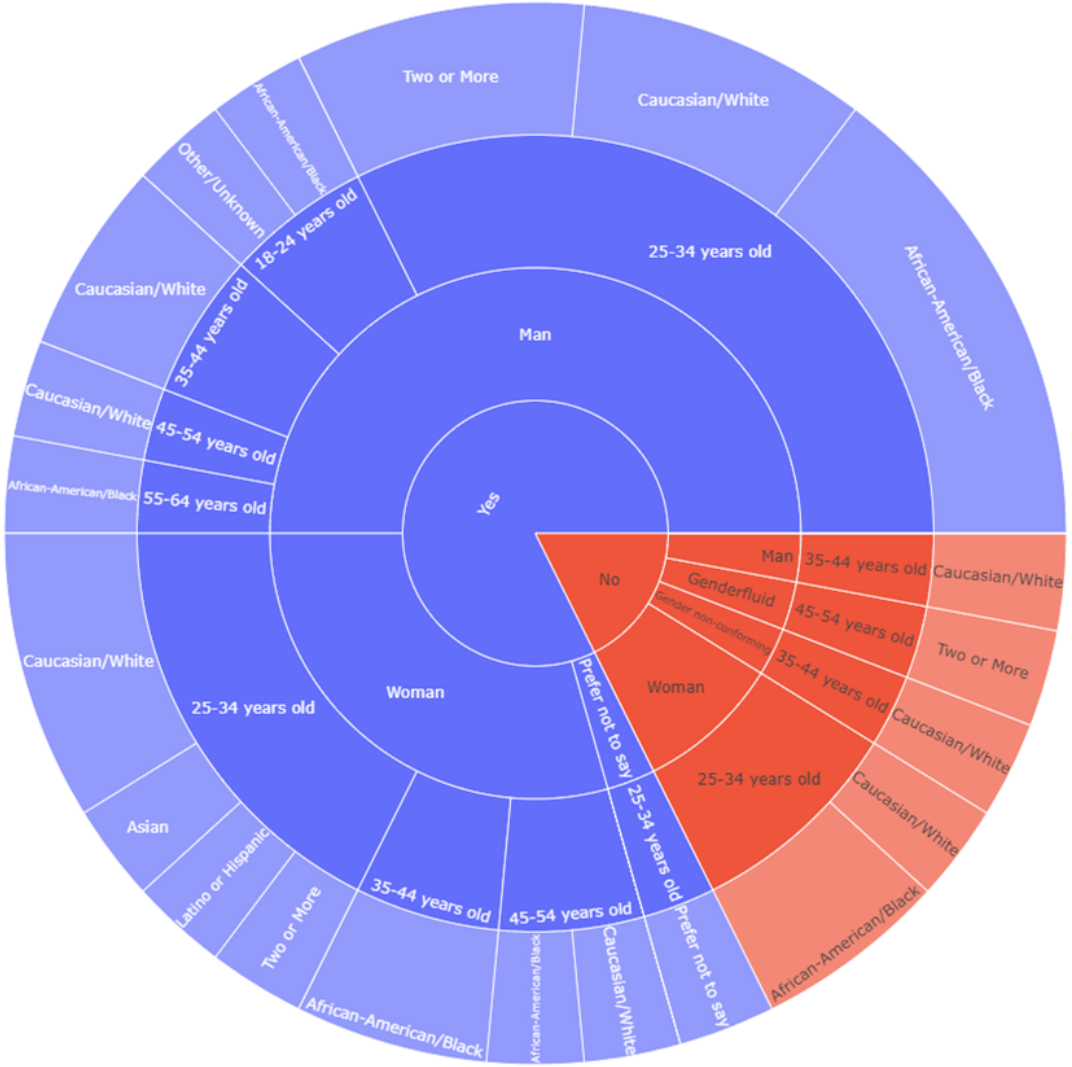
Ethnicity



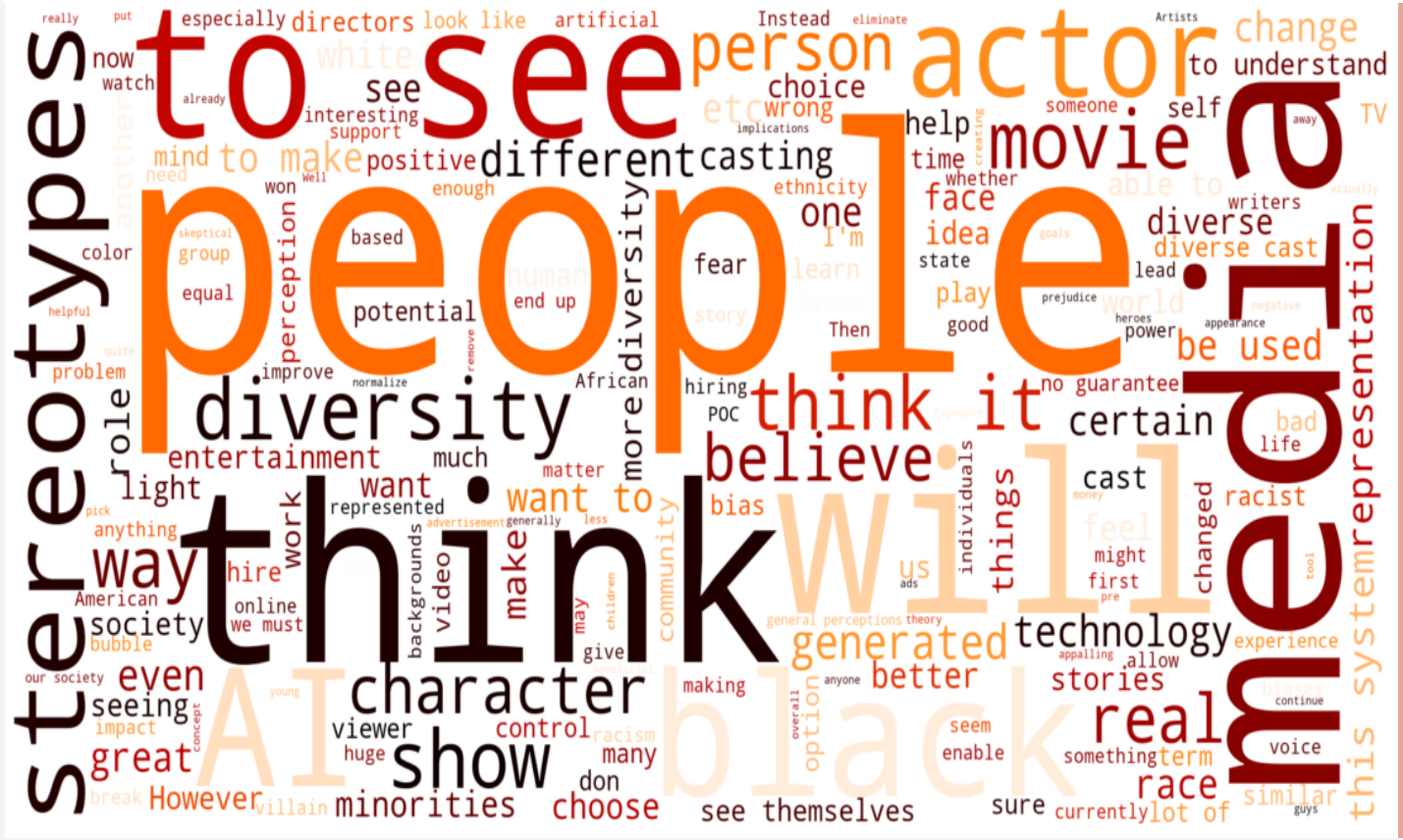
- Caucasian/White
- African-American/Black
- Latino or Hispanic
- Asian
- Native American
- Native Hawaiian or Pacific Islander
- Two or More
- Other/Unknown
- Prefer not to say

In your opinion, could Custom Casts create more diversity in the videos people see in general?

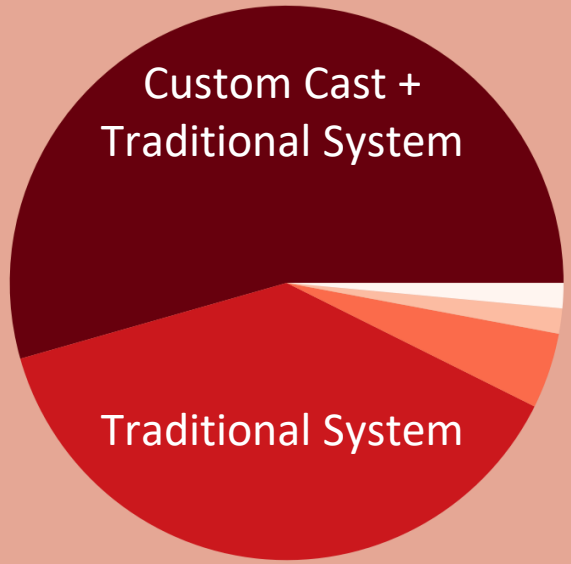


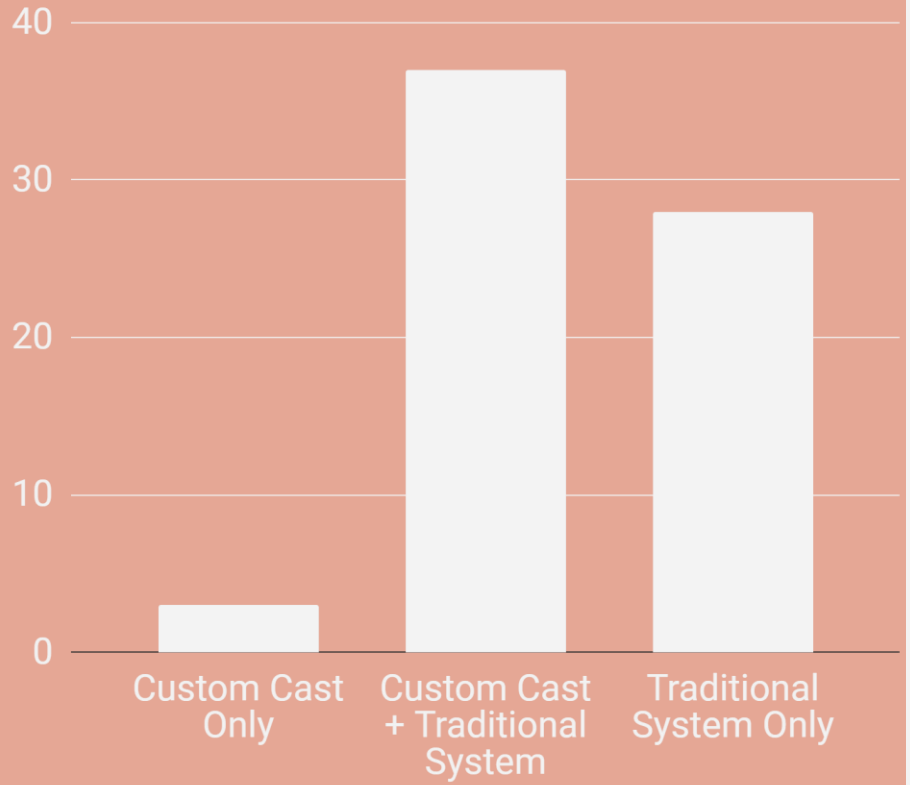


How do you Custom Casts could change general perceptions of Stereotypes?



Which would you prefer for watching movies and TV?





Room for Growth

Opinions for other Media

	Online Learning	Ads & Commercials	Online Shopping
Custom Cast Only	7.2%	19.1%	14.7%
Custom Cast + Traditional System	59.4%	41.2%	45.6%
Traditional System Only	33.3%	39.7%	42.7%

RECOMMENDATIONS

Develop Custom Casts for Platform

Develop deep learning architectures necessary to deploy Custom Casts to the Netflix Platform, potentially available only to Netflix exclusives upon release.

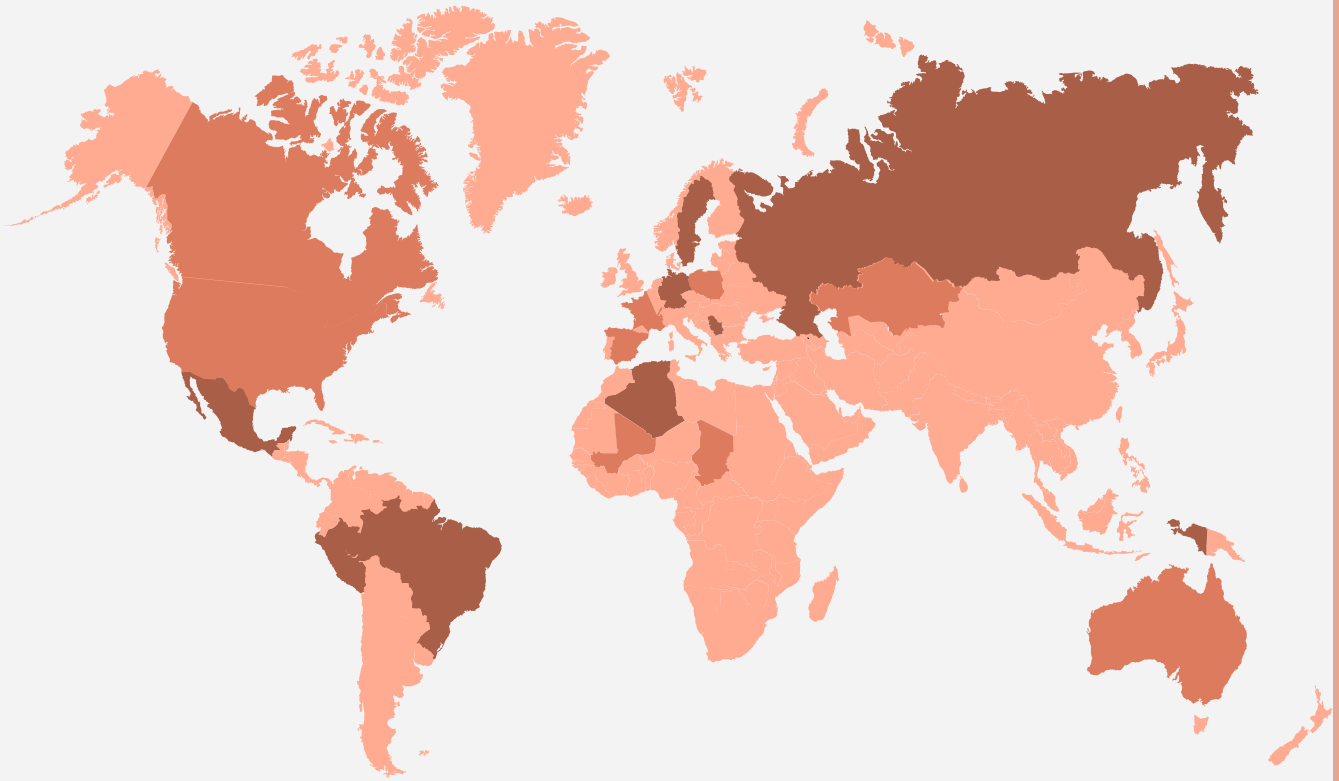
Package Custom Casts to be sold to other platforms

Due to public response with other media such as Advertisements, Online learning and shopping, selling access to custom casts could be a large revenue stream.

Develop extensions to the Custom Cast System

Over time Netflix could further develop Custom Cast to offer packages of casts that are popular among other users of the Platform.

FUTURE WORK



- Develop a more diverse dataset for Custom Cast and computer vision applications in general
- Develop animating systems to map several characters in a scene.

THANKS

Does anyone have any questions?

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https://github.com/MoJoMoon

This is where you give credit to the ones who are part of this project.

- Presentation template by Slidesgo
- Icons by Flaticon
- Infographics and images by Freepik
- Author introduction slide photo created by Freepik
- Text & Image slide photo created by Freepik.com

RESOURCES

Capstone Citations:

Code:

- https://docs.python.org/3/library/urllib.html
- https://medium.com/@jonathan_hui/gan-stylegan-stylegan2-479bdf256299
- https://medium.com/@erika_dike/how-to-download-100-pictures-from-a-site-with-selenium-e23b7ecacb85
- https://medium.com/ymedialabs-innovation/web-scraping-using-beautiful-soup-and-selenium-for-dynamic-page-2f8ad15efe25
- https://www.linkedin.com/pulse/how-easy-scraping-data-from-linkedin-profiles-david-craven/
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- https://github.com/ak9250/stylegan-art
- https://devopstar.com/2019/02/25/generating-cats-with-stylegan-on-aws-sagemaker
- https://medium.com/@utk.is.here/keep-calm-and-train-a-gan-pitfalls-and-tips-on-training-generative-adversarial-networks-edd529764aa9
- https://www.tensorflow.org/tutorials/generative/dcgan#create_a_gif
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- https://medium.com/analytics-vidhya/implementing-a-gan-in-keras-d6c36bc6ab5f
- https://docs.opencv.org/3.4/db/d28/tutorial_cascade_classifier.html
- https://github.com/EvolvedSquid/tutorials/tree/master/gans
- http://papers.nips.cc/paper/8935-first-order-motion-model-for-image-animation

RESOURCES

- https://arxiv.org/abs/1906.11613
- https://arxiv.org/pdf/1406.2661.pdf
- https://arxiv.org/pdf/1606.03498.pdf
- https://arxiv.org/pdf/1511.06434.pdf
- https://arxiv.org/pdf/1912.04958.pdf
- https://arxiv.org/abs/1703.06868
- https://github.com/NVlabs/ffhq-dataset
- https://www.nltk.org/api/nltk.tag.html
- https://www.learntek.org/blog/nltk-sentiment-analysis/
-
- NIPS 2016 Tutorial: Generative Adversarial Networks Ian Goodfellow https://arxiv.org/abs/1701.00160
- Special Thanks to all of the work Jeff Heaton has featured from his University of Washington in St. Louis Course
-
- **Representation in Media**
- https://www.theguardian.com/world/commentisfree/2018/nov/05/newsroom-diversity-media-race-journalism
- https://www.statista.com/topics/3342/minorities-in-media/
- https://annenberg.usc.edu/sites/default/files/2017/04/07/MDSCI_CARD_Report_FINAL_Exec_Summary.pdf
- https://socialsciences.ucla.edu/wp-content/uploads/2019/02/UCLA-Hollywood-Diversity-Report-2019-2-21-2019.pdf