



CUSTOM CASTS for

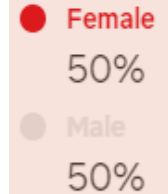
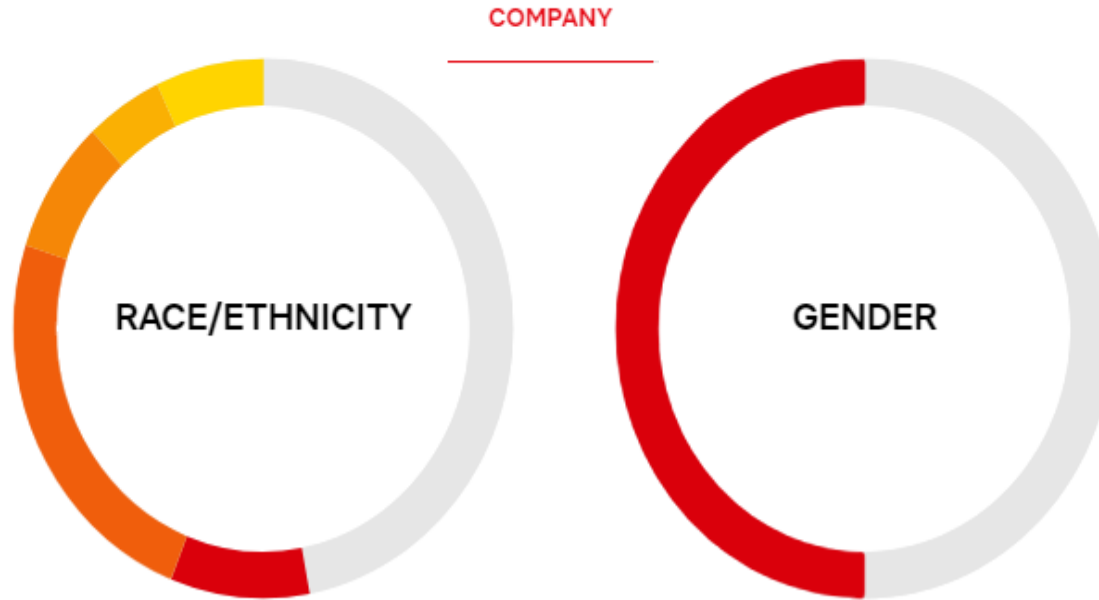
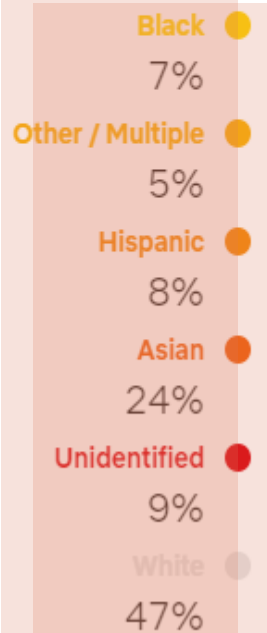
NETFLIX

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Capstone Presentation
Flatiron School Data Science Cohort 012120

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



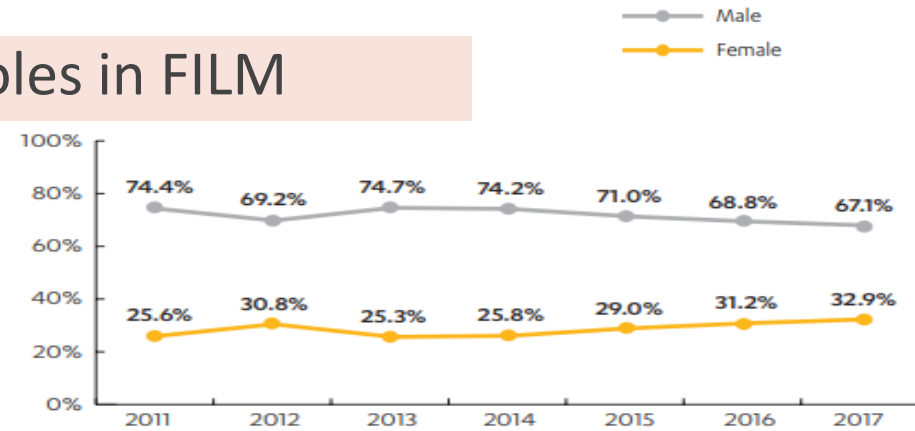
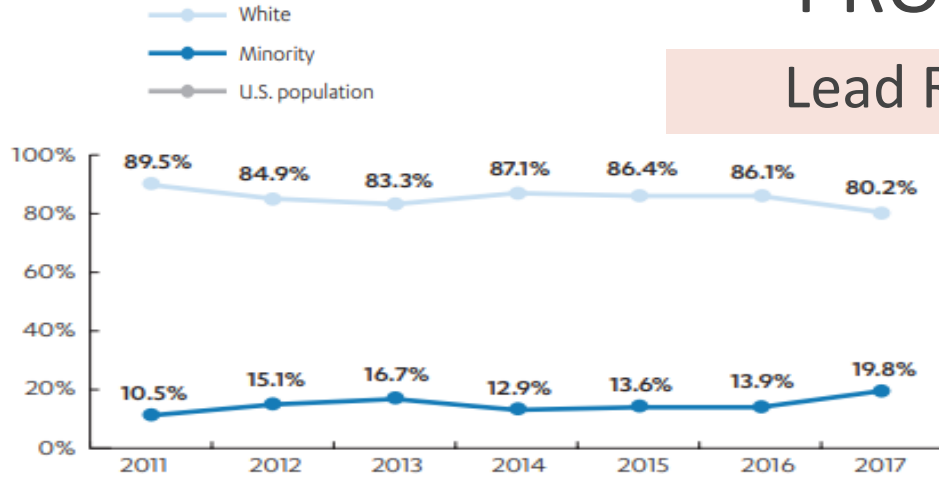
NETFLIX Workforce Demographics Q2 2020



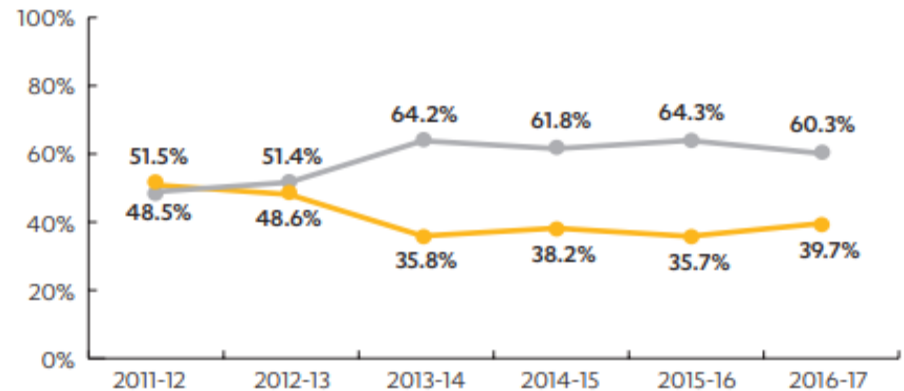
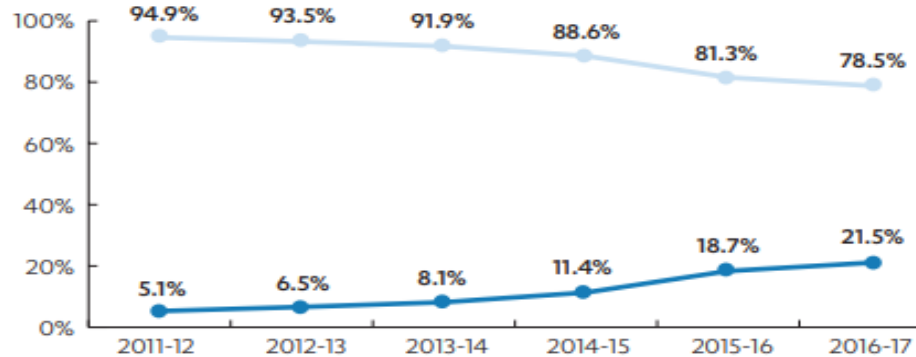
Race/Ethnicity data is US only. Gender is worldwide.

PROBLEM

Lead Roles in FILM



Lead Roles in SHOWS



SOLUTION: Custom Casts

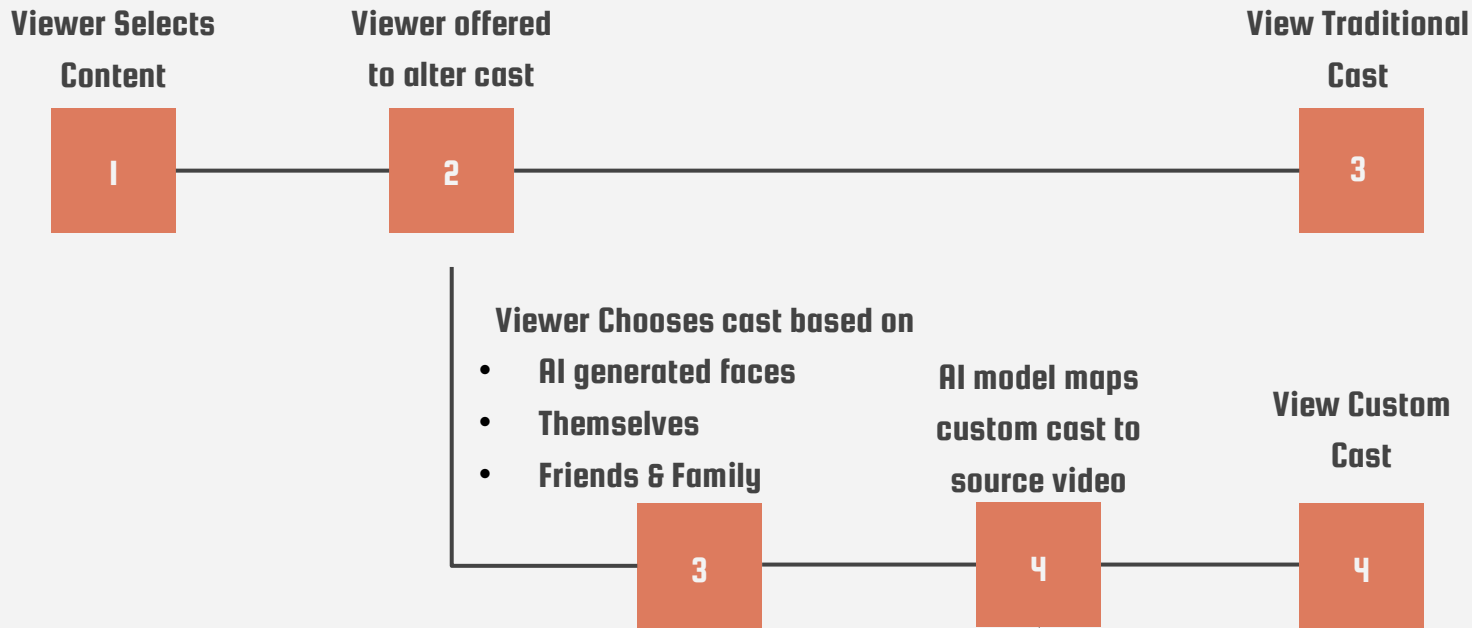


With Custom Casts, Netflix can use Artificially Generated Faces to allow viewers to tailor make the cast for any viewing on the platform, enabling what users view to reflect Netflix's views on diversity.

SOLUTION: Custom Casts



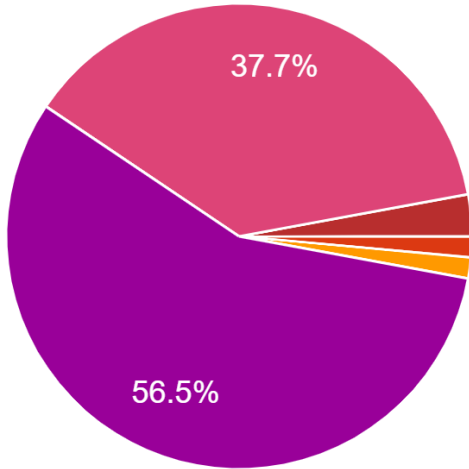
New Choices with Custom Casts



Public Opinion on Custom Casts

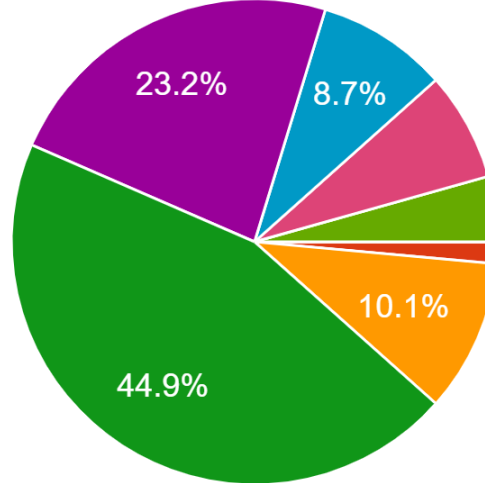
69 Respondents

Gender



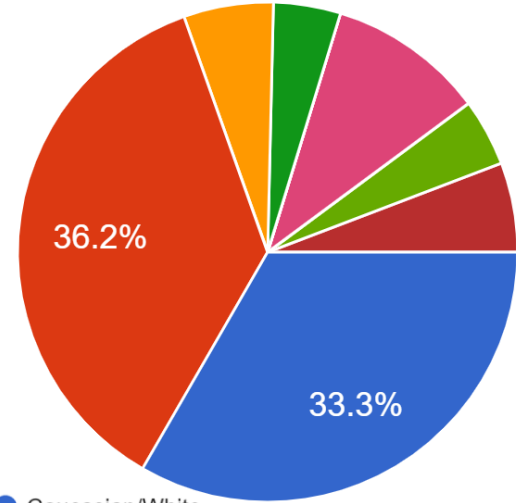
- Agender
- Genderfluid
- Gender non-conforming
- Genderqueer
- Man
- Non-binary
- Woman
- Other
- Prefer not to say

Age



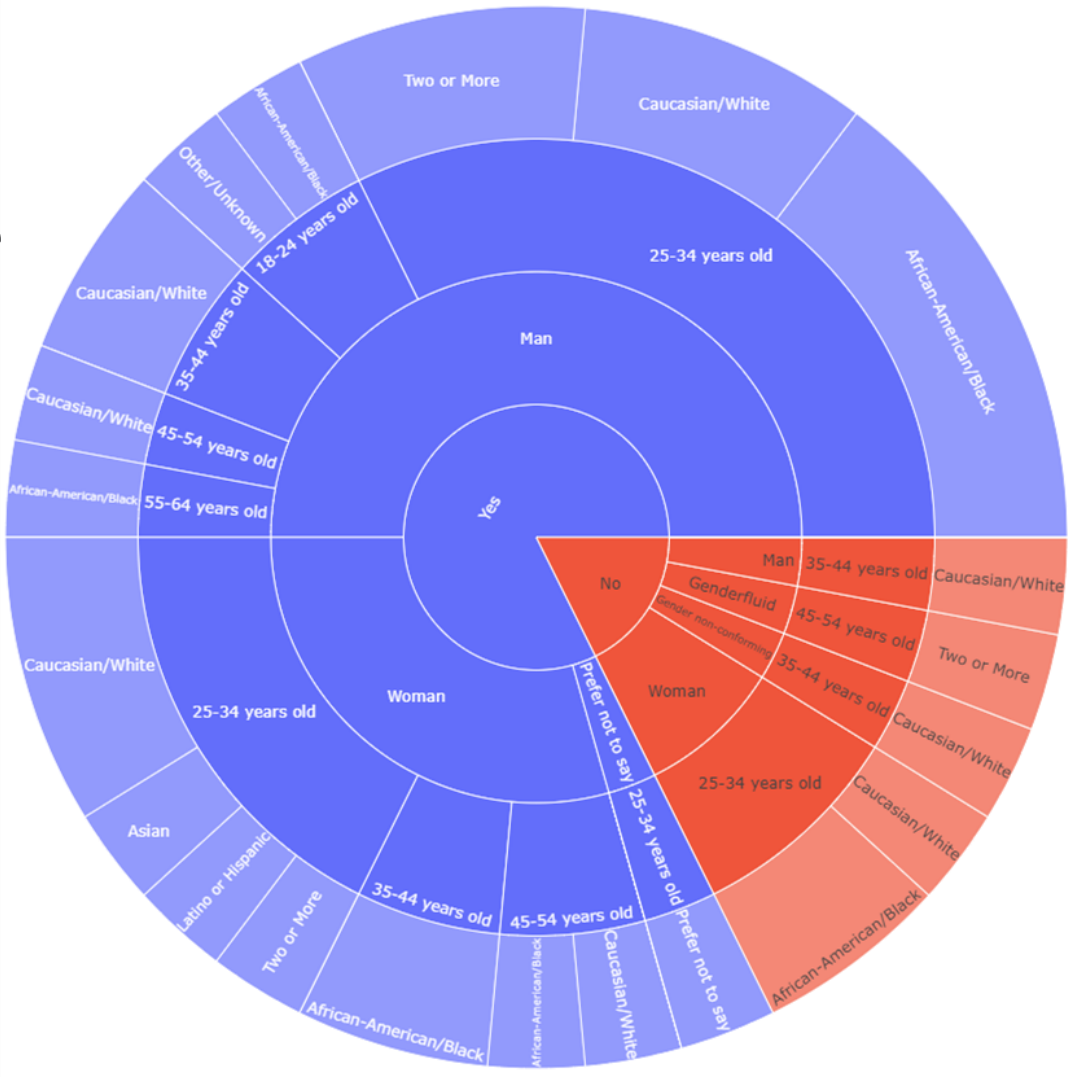
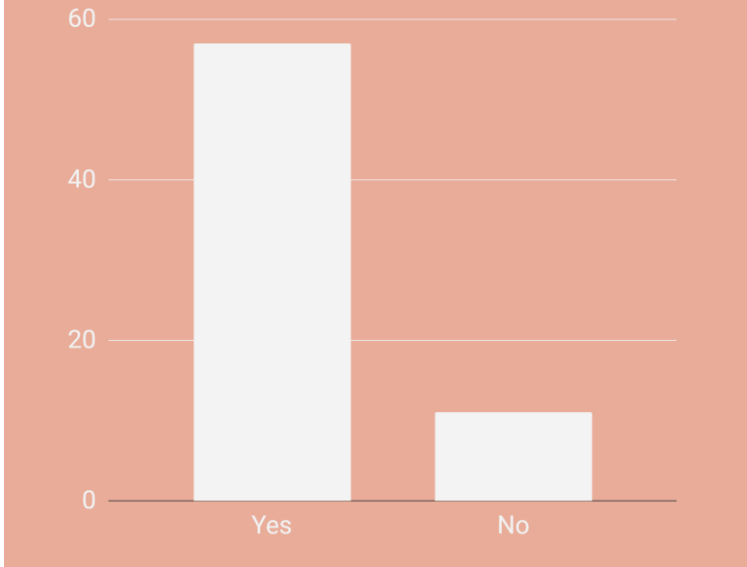
- Under 12 years old
- 12-17 years old
- 18-24 years old
- 25-34 years old
- 35-44 years old
- 45-54 years old
- 55-64 years old
- 65-74 years old

Ethnicity

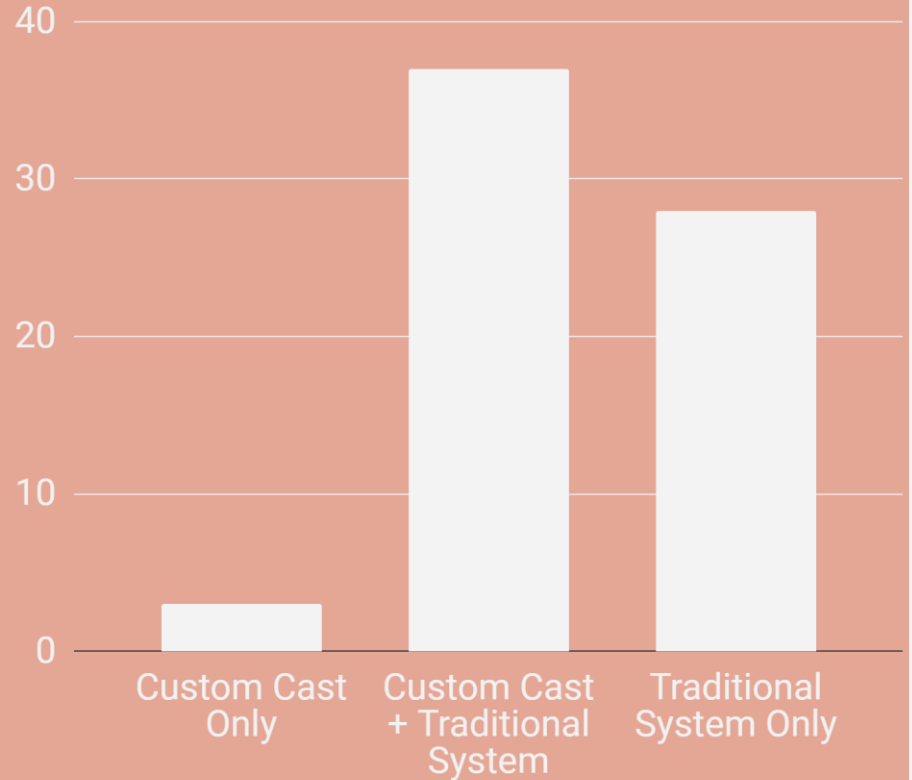
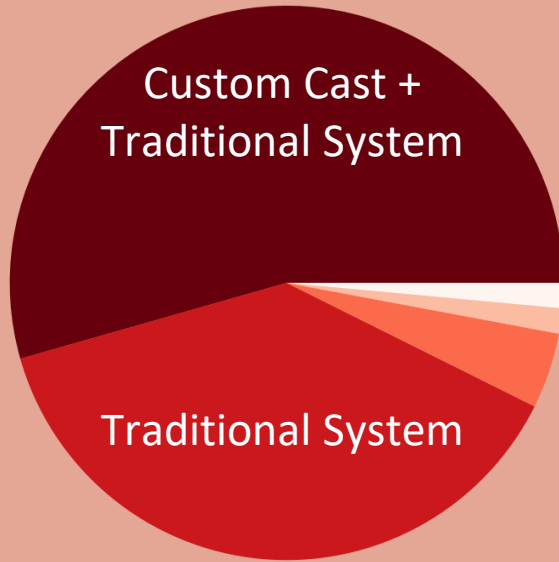


- Caucasian/White
- African-American/Black
- Latino or Hispanic
- Asian
- Native American
- Native Hawaiian or Pacific Islander
- Two or More
- Other/Unknown
- Prefer not to say

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



Which would you prefer for watching movies and TV?



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 %



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.



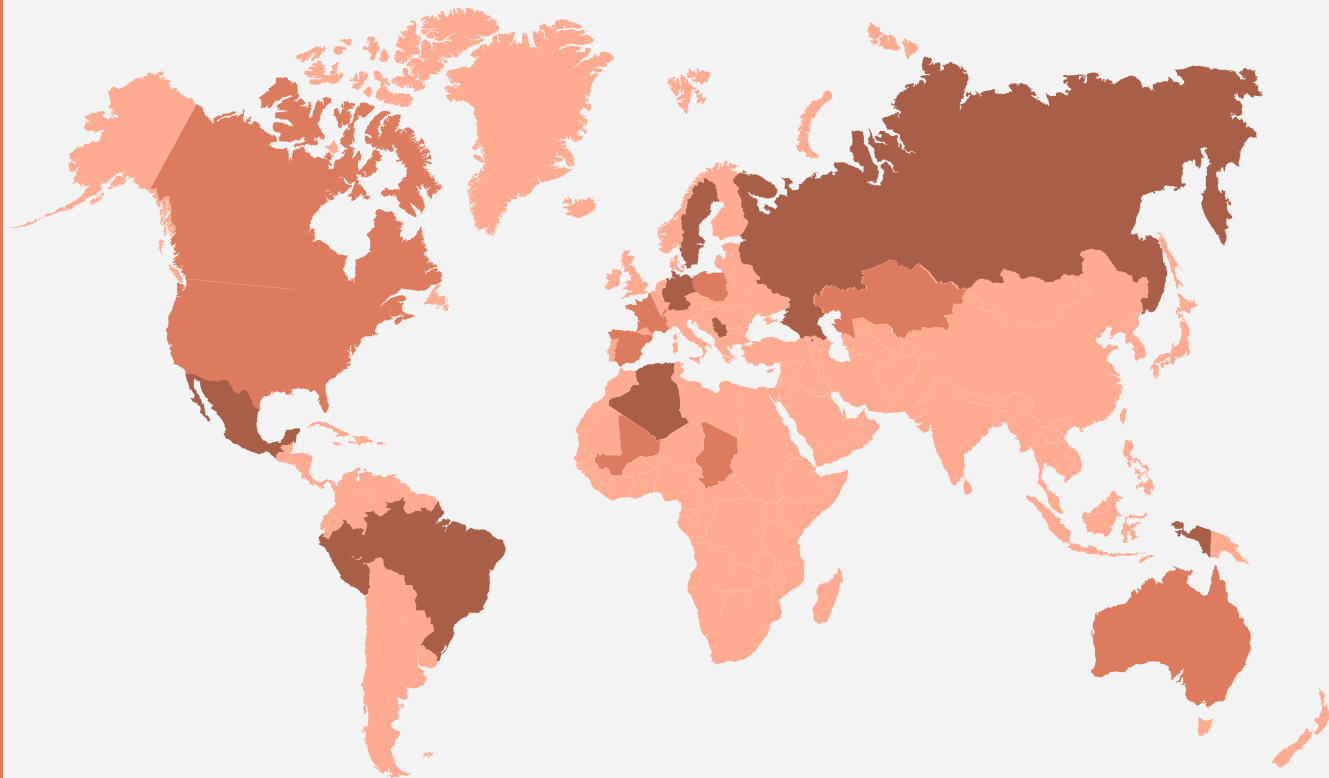
Package Custom Casts to be sold to other platforms

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.



- 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

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>
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- <https://github.com/ak9250/stylegan-art>
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- <https://medium.com/@utk.is.here/keep-calm-and-train-a-gan-pitfalls-and-tips-on-training-generative-adversarial-networks-edd529764aa9>
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- <https://github.com/EvolvedSquid/tutorials/tree/master/gans>
- <http://papers.nips.cc/paper/8935-first-order-motion-model-for-image-animation>

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- <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/>
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- 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://annenbergl.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>