

Development Of Instagram Filter Using Spark AR In An Effort To Preserve Kupang Malay Language

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Abstract

The purpose of this study was to develop an Instagram filter using Spark AR Studio. The Instagram filter is expected to preserve the Kupang Malay Language, where the use of Kupang Malay has begun to decline in the current digital era. Instagram filters can be used by Instagram and Facebook social media users. In this study discussed the process of developing Instagram filters, publishing filters on sparker.facebook.com and analyzing the use of filters using the insight feature after using the filter for 3 months.

Keywords: Language, Kupang Malay, Filter Instagram, Spark AR.

1. Introduction

Language as a means of communication that has special characteristics that are also the property of humans as creatures that can develop and survive. Language takes the form of a system, symbol, sound, which is arbitrary, meaningful, conventional, unique, universal, productive, varied, dynamic, as a tool of social interaction and serves as the identity of its speakers. [1]

Seeing the development of the language in Indonesia, in 1930, Malay became one of the speakers of the so-called Indonesian unity language, and became known as Indonesian. [2] The choice of Malay as the root of Indonesian is not without reason, although the number of speakers is much less when

compared to Javanese and Sundanese speakers. [3]

According to the Language Map of the Ministry of Education and Culture, the distribution of Malay is very wide in Indonesia, one of which is in Kupang City, East Nusa Tenggara Province. The language used by the people of Kupang City, East Nusa Tenggara Province in general, is to use Kupang Malay in addition to Indonesian which is a unifying language for Indonesians who come from various ethnic and cultural backgrounds.

Kupang Malay or Kupang language is a type of Lingua Franca, which is a language that is systematically used for a means of communication between parties who do not have a common language. Lingua Franca is the language of instruction or social language so

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that each party, who is different in language, equally understands what is being conveyed. [4]

Kupang City became a magnet for community migration, thus forming a mosaic of Kupang Malay speech. Kupang Malay is part of the Malay-based creole language. Some words in Kupang Malay are an absorption of Dutch, Portuguese and Indonesian. [5] Some words in Kupang Malay are absorption of Dutch, Portuguese and Indonesian. [6] Kupang Malay speakers come from a variety of different ethnic backgrounds, such as the Rote, Dawan, Sabu, and Flores, Helong, Alor, Sumba, Javanese, Balinese, Bugis, Chinese, Arabic, Ambon, Manado, and others from various regions in Indonesia.

Like creole languages in general, Kupang Malay shows a special similarity, both in terms of grammar which leads to a theory of grammar that is universal. Kupang Malay has undergone a decades-long process of creolization, caused by the compilation of the dominant language influenced by some of the innate vocabulary of the immigrant community in Kupang City.

Although Kupang Malay speakers have different cultural backgrounds, Kupang Malay remains a colloquial language that develops from generation to generation. For the indigenous people of Kupang, Kupang Malay is the mother tongue or their parents or ancestors. [7] Kupang Malay became the language of unity as well as the language of daily communication in informal situations.

Along with the times the use of Kupang Malay in Kupang City has decreased. There are several words in Kupang Malay that are not often used in the daily life of the people of Kupang City, especially by generation Z and above, namely the generation born in 1996 and above. Therefore, it is necessary to make efforts to preserve the Kupang Malay Language to prevent the extinction of the use of Kupang

Malay words in the daily life of the people of Kupang City.

Technological innovation with the use of social media makes the flow of information flow quickly and rapidly. Social Media users in Indonesia such as Facebook and Instagram are mostly domiciled by millennials and Generation Z [8]. Instagram is one of the applications that many millennials and generation Z have, because of its easy use to get information quickly.

Instagram itself is a social media that favors visual content, either in the form of photos or videos. [9] The Instagram's that appeared in 2010 have a growing number of users every year. According to data from DataIndonesia.id, based on Napoleon Cat data, the number of Instagram social media users in Indonesia in October 2022 reached 97.38 million people. [10] Instagram as one of the social media has a special power and role in the communication process. Not only for exchanging information, Instagram is an entertainment that is easily accessible anytime and anywhere.

The development of information and communication technology through Instagram has changed the way of interaction between individuals, where internet involvement becomes a digital space which further creates a cultural space. Instagram allows its users to take photos and videos, apply digital effects, and share social networking services.

The use of Instagram social media can be used as a forum to develop education, in an interesting and fun way, in this case as an effort to preserve the Kupang Malay language which is almost extinct through the use of features on Instagram. Instagram has an Instagram Stories/Instastory feature which allows users to create short-form videos and can share those videos with other users. [11]

Instagram Stories Instastory has an effect that can be used to add variety to the look of the video. A wide variety of effects can be

used. There are effects that use Augmented Reality (AR) that can detect the user's head, face, movement, and voice. The results of detection by using AR can change the user's face, or voice by displaying an image, or text on the user's face and or providing audio effects based on the type or choice of effect the user uses. [12]

The use of effects in the Instastory feature is also familiarly called the Instagram filter. Instagram filters are designed by user generated content as a means of entertainment, personalization, and modification for Instagram users in creating stories through photos and videos. Instagram effect will combine between photo and video with virtual effect. The presence of the Instagram effect forms a creative feature by user generated content from content creators who show their work. Instagram effect content makes it closer to users and increasingly attracts users to access Instagram longer.

Spark AR Studio is an Augmented Reality platform for Mac & Windows that allows users to easily create AR effects for mobile phone cameras. The Spark AR platform uses Augmented Reality technology which has a simple user-interface and is created for creators who want to create interactive works easily. The development of Spark AR focuses on the use of Augmented Reality for social media platforms such as Facebook and Instagram [13]

The augmented reality platform on Mac and Windows operating systems allows users to easily create augmented reality effects for cameras (mobile). This platform will act like Photoshop or Sketch but is used to create Augmented Reality. [14] Image-based social media has become popular, because it is considered attractive and attracts the attention of users through the use of biased visuals created directly by each user.

The features inside Spark AR make it easy for creators of any level to get started

creating AR projects, both simple and complex. The Spark AR capability on Instagram will provide an AR experience including target tracking allowing AR effects to be tethered to specific images or objects.

The product output of Spark AR is in the form of an interactive design dominated by creation, which plays a preset feature so that it will change the color tone of a photo or video, by producing interactive works that are biased in responding to the arrangement of human face shapes to be given decorations of the head, neck, to the surface of the skin on the face.

The use of Instagram effects or filters is dominated by young people from vulnerable millennials to generation Z, to tell their daily activities through Instastory. The use of Instagram effects will also be increasingly liked by its users, because the expression space is interactive.

This is certainly in line with the purpose of efforts to develop Kupang Malay to millennials and generation Z in a fun and interactive way through the use of effects on Instagram. Kupang Malay language needs to be preserved again, especially for the local community so that it does not become extinct with the development of the times and technology. The presence of user generated content in cyberspace makes the content effects or filters on Instagram will feel closer to its users.

Spark AR has a target tracking feature, where the feature functions to trigger effects when the camera is aimed at an image or a Marker. By utilizing technology developments such as Spark AR Studio, it is possible to produce a filter on social media such as Instagram and Facebook that can be used by social media users to preserve Kupang Malay. The design of the filter will be reviewed in this article.

2. Research Methods

The Method or proximity used to answer the problems of this research in achieving research objectives, as well as the stages of research are as follows: (1) literature study, (2) design and implementation, (3) evaluation, (4) analysis and testing.

Literature Studies

At this stage a literature study of several studies was carried out that is considered related and relevant to this study. Literature studies are carried out to find out the development of other research in the last few years that have the same discussion or research topic as the research topic to be carried out. The previous research related to this research is as follows:

1. Designing an Augmented Reality-Based Instagram Filter with a Spark AR Face Mask on a New Media College Account by I Komang Angga Maha Putra. This study discusses the design and publication of augmented reality-based Instagram filters with Spark AR face masks to increase brand awareness of New Media College institutions. [15]
2. Docile – Game Development Using Spark AR by Rony Thomas et al. In this study discussed the development of a game called Docile. This game utilizes the user's front camera to capture the player's facial movements and eye movements to interact with the game. [16]

Based on the results of literature studies that have been carried out, things that can be raised in this study are: Designing and Creating Instagram filters based on the Kupang Malay Language Game. The Kupang Malay game can be played as an Instagram filter by capturing the player's face movements. The game's questions and answers will appear on the top of the player's head. This game is called "How Kupang Basong" which means How Much Kupang You Are.

Design and Implementation

At the design stage, there are two things, namely the Filter Design Flowchart and the Filter Content Design.

Here is the Flowchart of Kupang Malay Game Filter Design:

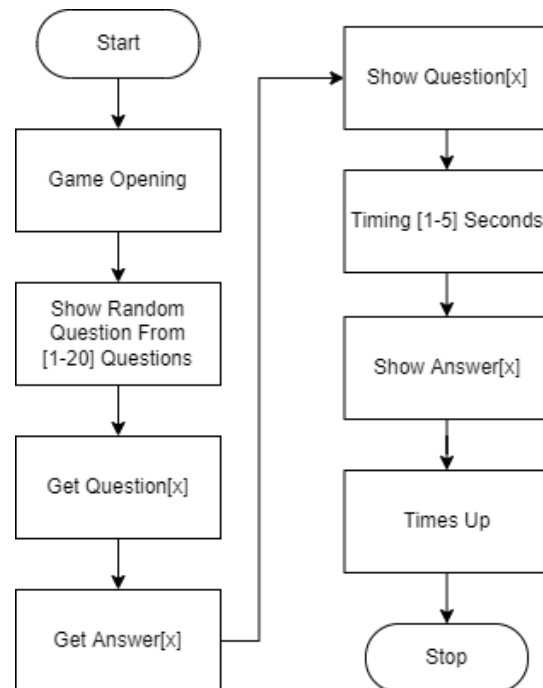


Figure 1. Filter Design Flowchart "How Kupang Basong"

In filter content design, a texture design is carried out which will be used in creating filters using Spark AR. The texture design needs to be prepared is a logo, intro, questions, answers, timings, and times up captions. Here's the design:



Figure 2. Logo Filter



Figure 3. Intro Games

Cogat orang	Kejepit	Kotor, jorok, tidak enak dilihat	Main curang
Melas	Marah orang dengan kasar dan lantang	Menggunakan tongkat untuk mengambil buah	Menghalangi/menutupi sesuatu yg ingin dilihat
Menyatakan tidak mau tahu lagi	Menyerah	Mobil angkot	Orang dgn kekuatan ilmu sihir
Pelit	Pukul orang	Rakus sekali seperti tidak pernah lihat makanan	Suka berbuat sembarangan
Suka cepat-cepat	Terbentur sesuatu benda	Tidak bisa diam di tempat	Tidak pintar

Figure 4. Design 20 Questions

Tepa	Tagepe	Kamomos/ dadolek	Paricuk
Pamokol	Masperak	Podak	Pele
Farek	Do'o	Bemo	Suanggi
Kake'ek/ kanik batu	Falungku/ habok/ mot/ papoko	Balalas	Harbahiruk
Makararapak	Tatoki	Sikilalotik/ cakadidik/ masnanaok	Ngall

Figure 5. Design 20 Answers



Figure 6. Timing and Times Up

The texture image above will be used in the design of the "How Kupang Basong" filter.

<https://sparkar.facebook.com/ar-studio/download>

3. Results And Discussion

In the implementation stage, filter creation is carried out using Spark AR version v135.00.14.216. This Spark AR application can be downloaded on the page [17]

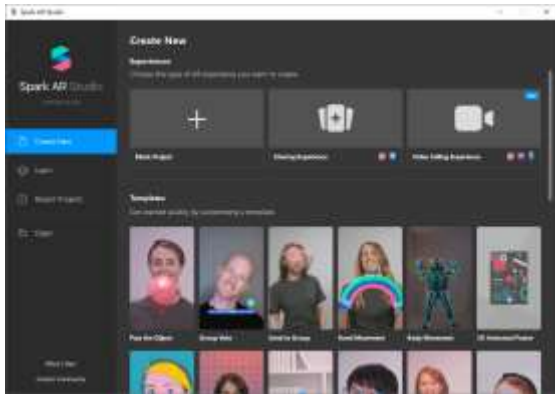


Figure 7. Spark AR Software

The type of Project used is Sharing Experience. In the project, a new scene was created using a face tracker. In the face tracker, a new 3D Object is added, namely the plane, which is then given the name **How Much Kupang Basong**.

For this plane, a new material is created by uploading the intro file.png which has been prepared on the texture.

Then also added another plane named: **question, answer, time, and time out.**

In the question plane, a new material is created by uploading a question file (consisting of 20 question files in .jpg format) on an animation sequence type texture.

Animation sequence is used for plane **questions, answers** and **time**. Meanwhile, **the plane time finished** is made the same as the **plane How Much Kupang Basong**, which only uses textures, not using animation sequences.



Figure 8. Making "How Much Kupang Basong" Filter in Spark AR Studio

Once all the filter content is ready it is then activated in the Patch Editor. The Patch Editor serves to add interactive logic, the addition of animations between planes, or textures, or animation sequences. [18]

Here is the interactive logic added to the patch editor, so that the filter can work according to the design in figure 1:



Figure 9. Editor's Patch on Filter Creation "How Much Kupang Basong"

Before the filter is published on [the https://sparkar.facebook.com](https://sparkar.facebook.com) a trial is carried out on a smartphone, by means of a smartphone paired with the Spark AR Player application, then the smartphone is connected to the Spark AR Studio on a PC/ Laptop via a data cable. There is a test on device menu in Spark AR Studio on the left side of the software menu. On smartphones, a filter trial was carried out as well as recording a demo of the use of the filter using the Spark AR Player application. This demo will be used in the filter registration on the page <https://sparkar.facebook.com>

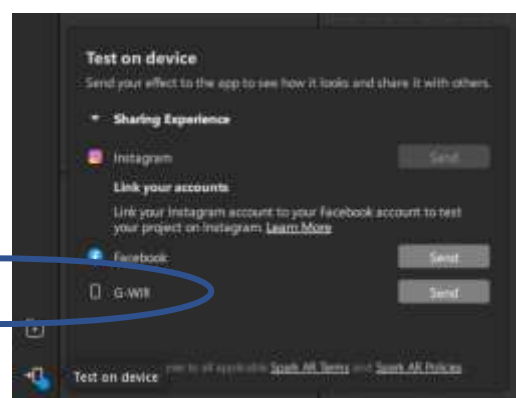


Figure 10. Test on device

Furthermore, after the trial process on the Spark AR Player application is complete and the use of the filter is in accordance with the filter design, the filter can be published on [the https://sparkar.facebook.com](https://sparkar.facebook.com)

In this study, the filter was published on March 19, 2022, then processed approval by the sparkar.facebook.com and was only approved for use by Facebook and Instagram users on April 8, 2022. Then after 3 months of using the filter, the following data was obtained:



Figure 11. Effect Insight

From the results of data analysis on the insight effect menu (figure 11) information was obtained after 3 months of published filters, there were **371 thousand impressions**. Impressions are the number of times your effects are displayed on the screen in stories, posts, and reels on Instagram, as well as in stories and posts on Facebook. [17]

From the data obtained, there are also **1.3 million opened frequencies**. Frequency Opened is the number of times people open the effect on Instagram or Facebook camera. [17]

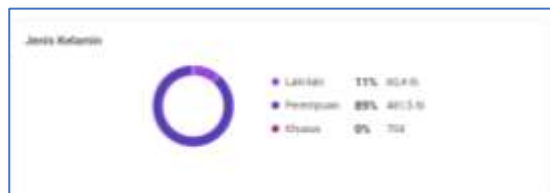


Figure 13. Users Filter by Gender and Age

In figure 13, it can be seen that the highest filter users are female with an age range of 18-24 years at **55%**.

4. Conclusion

So based on the impression data and the frequency of opening, it can be concluded that for 3 months the filter / effect has a high usage rate of 1.3 million and from this use as much as **28.54%** of filters / effects are published by users through stories, posts and reels on Instagram, as well as stories and posts on Facebook.

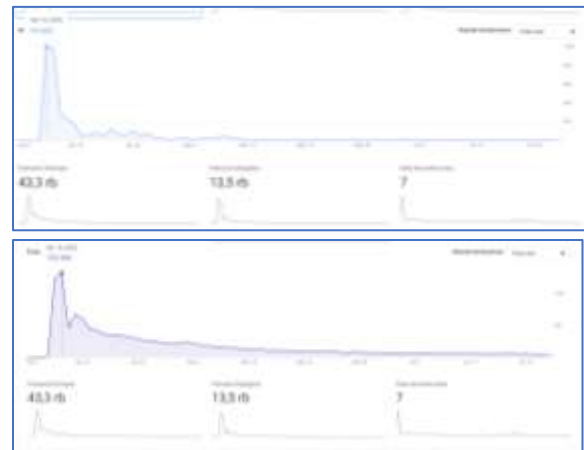
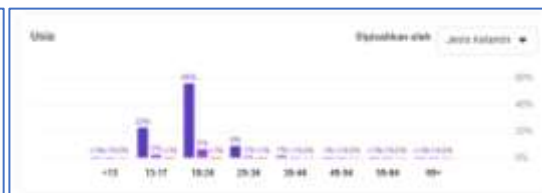


Figure 12. Impression Details and Frequency of Opening

Based on the detailed impression data and the frequency of opening (figure 12) above, the highest level of filters/effects was obtained on April 12 and April 13, 2022, namely 99,685 Impressions and 130,906 opened frequencies. Thus it can be concluded that the highest daily use of filters/effects was 130,906 and of these uses **76.15%** of filters/effects were published by users.



From the discussion and the results of data analysis obtained on the insight effect menu (figure 11), it can be concluded that using Spark AR Studio can produce a filter on social media such as Instagram and Facebook that can be used by social media users with an age range of

18-24 years, so that the goal of preserving Kupang Malay in the millennial generation can be achieved.

The existence of the Kupang Malay Instagram effect is not just entertainment, but is also expected to produce benefits for many people in Indonesia in general, and especially for the Kupang people in the vulnerable age of millennials and generation Z.

Conflict of Interest

The authors declare no conflict of interest

References

- [1] Chaer, A., *Linguistik Umum*, Jakarta: Rineka Cipta, 2012.
- [2] Montolalu, L. R., & Suryadinata, L, "National language and nation-building: The case of Bahasa Indonesia" dalam *Language nation and development*, Singapore: ISEAS Publishing, 2007.
- [3] Bulan, D. R., "Bahasa Indonesia sebagai Identitas Nasional Bangsa Indonesia", *Jurnal Ilmu Sosial dan Ilmu Politik*, vol. 3, no. 2, pp. 23-29, 2019.
- [4] A. M. D. Rafael, "Interferensi Fonologis Penutur Bahasa Melayu Kupang Ke Dalam Bahasa Indonesia Di Kota Kupang," *J. Penelitian Humaniora*, vol. 20, no. 1, 2019, doi: 10.23917/humaniora.v20i1.7225.
- [5] Rafael, A. M. D, "Interferensi Fonologis Penutur Bahasa Melayu Kupang ke dalam Bahasa Indonesia di Kota Kupang." Dalam *Jurnal Penelitian Humaniora*. vol. 20, no. 1, pp. 47-58, Februari 2020.
- [6] D. S. Latupeirissa, "Reduplikasi dalam Bahasa Melayu Kupang," Denpasar, 2016.
- [7] Rafael, A. M. D, "Interferensi Fonologis Penutur Bahasa Melayu Kupang ke dalam Bahasa Indonesia di Kota Kupang." Dalam *Jurnal Penelitian Humaniora*. vol. 20, no. 1, pp. 47-58, Februari 2020.
- [8] I. M. Aditiya, "Pengguna Facebook Indonesia dalam Bingkai Statistik," *GoodStats.id*, <https://goodstats.id/article/pengguna-facebook-indonesia-dalam-bingkai-statistik-mbiDB>, March 27, 2022.
- [9] Tamimy, M. F, *Sharing-mu, personal branding-mu*, Jakarta: VisiMedia Pustaka, 2017.
- [10] Rizaty, Monavia Ayu, *Indonesia Miliki 97,38 Juta Pengguna Instagram pada Oktober 2022*. dataindonesia.id, 2023.
- [11] R. D. Mahardika dan F. Farida, "Pengungkapan Diri pada Instagram Instastory," *J. Stud. Komun. Indonesian Journal Communication Studies*, vol. 3, no. 1, 2019, doi: 10.25139/jsk.v3i1.774.
- [12] I. K. A. M. Putra, "Perancangan Filter Instagram Berbasis Augmented Reality Dengan Face Mask Spark Ar Pada Akun New Media College," *Journal Teknologi Informasi dan Komputer*, vol. 6, no. 3, pp. 391–398, 2020.
- [13] Dicoding, "Belajar Membuat Augmented Reality," 2019. <https://www.dicoding.com/academies/135/tutorials>, February 05, 2021.
- [14] Chacon, B, *The Ultimate Guide to Spark AR Studio for Instagram*, 2019.
- [15] Putra, I. K. A. M, "Perancangan Filter Instagram Berbasis Augmented Reality dengan Face Mask Spark AR pada Akun New Media College," *Jurnal Teknologi Informasi dan Komputer*, vol. 6, no. 3, 2020.
- [16] P. V. J. Rony Thomas, Santhul Joseph, Pheleena V Thomas, Natha B, "Docile – Game Development Using Spark AR," *International Research Journal of Engineering and Technology*, vol. 8, no. 7, pp. 1043–1046, 2021.

- [17] “Unduh Spark AR Studio dan Mulai Buat Efek | Spark AR Studio,” Spark Ar Facebook, 2022.
<https://sparkar.facebook.com/ar-studio/download/>, March 11, 2022.
- [18] S. Allen, K. Gower, dan K. D. Allen, Handbook of Teaching with Technology in Management, Leadership, and Business, Massachusetts: Edward Elgar Published Limited, 2020.