



Multimedia Interaktif

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2020

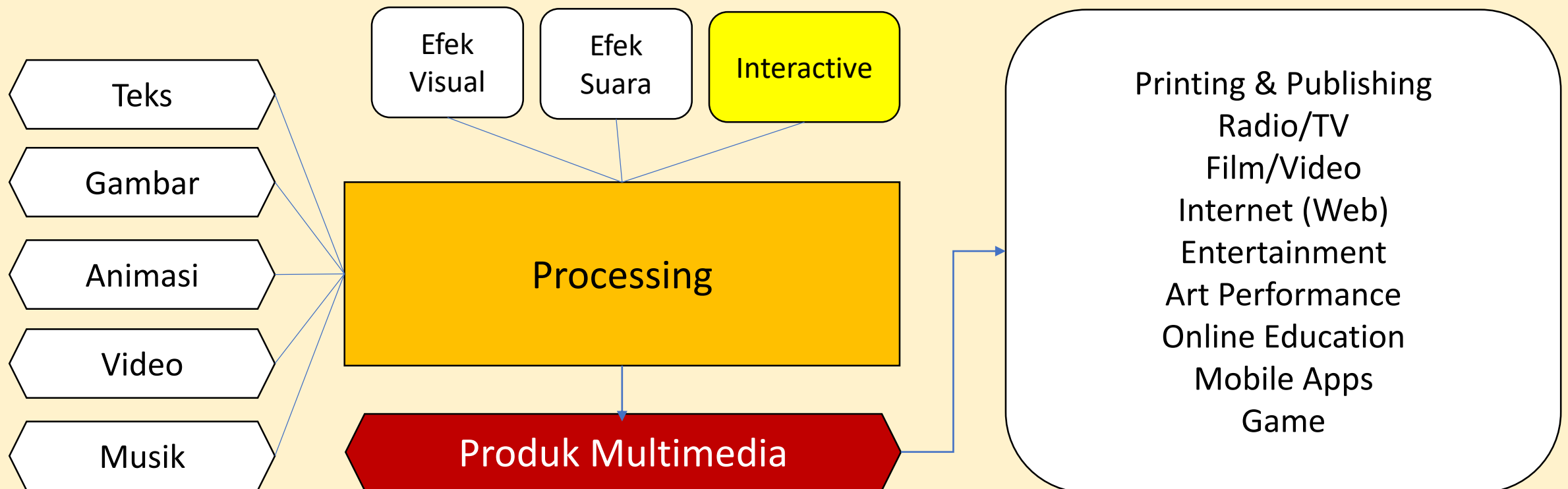
Media digital telah sangat mempengaruhi kehidupan sehari-hari orang dalam cara mereka terhubung, berkolaborasi, dan bekerja.



Teknologi Multimedia

Multimedia Production

Multimedia Broadcasting



Peluang di Bidang Multimedia Interaktif



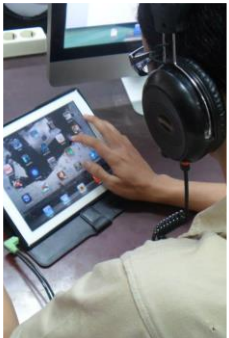
Multimedia Interactive

- AR/VR/Motion Capture/Gesture/Interactive Map/Projection



Multimedia Database

- Dataset Game, Tourism, Culture, Paintings, 3D Model



Games Technology

- Gamification, Environmental Model, Game Frameworks



Computer Aided Learning

- e-Learning systems, Long Life Learning, Interactive Learning

Beberapa Contoh Penelitian di Bidang Multimedia Interaktif

1

Sistem Pengenalan
Gerakan Bahasa
Isyarat

2

Latihan Fisik Untuk
Usia Lanjut
Menggunakan Kinect

3

Prediksi Pola Sebaran
Ikan menggunakan
Data Satelit

4

Virtual Gamelan

5

Online Visual Novel
Framework



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Sistem Pengenalan Gerakan Bahasa Isyarat

INDONESIA SIGN LANGUAGE SYSTEM

a b c d e f g

palm forward thumb bent out thumb also often lower (like a claw) palm in

palm is always forward except where noted

h i j k l m

palm in

n o p q r s

palm faces opposite side of body index finger points out like p but points down and unseen fingers curled in

t u v w x y z

palm forward thumb can be over fingers whole palm can be slanted to side away from body

0 1 2 3 4 5 6 7 8 9



Deaf people use sign language to talk each other. They use standard sign language.

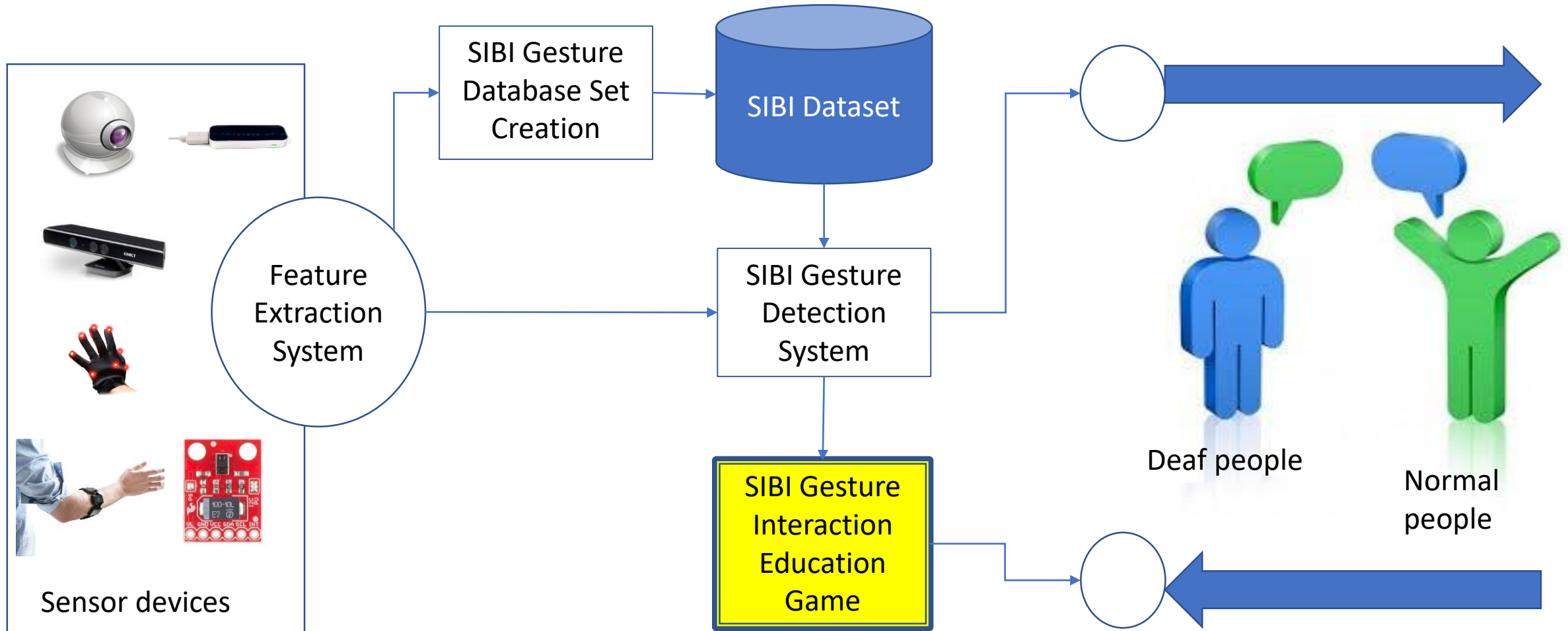
When normal people communicate with deaf people, sometimes they don't understand the sign language.



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Sistem Pengenalan Gerakan Bahasa Isyarat

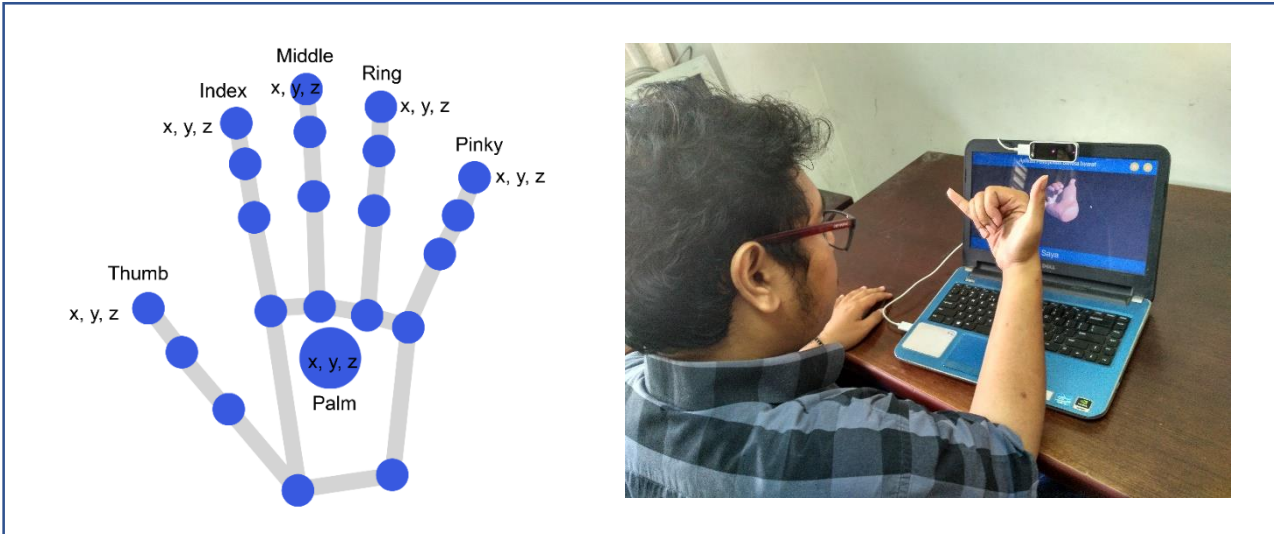




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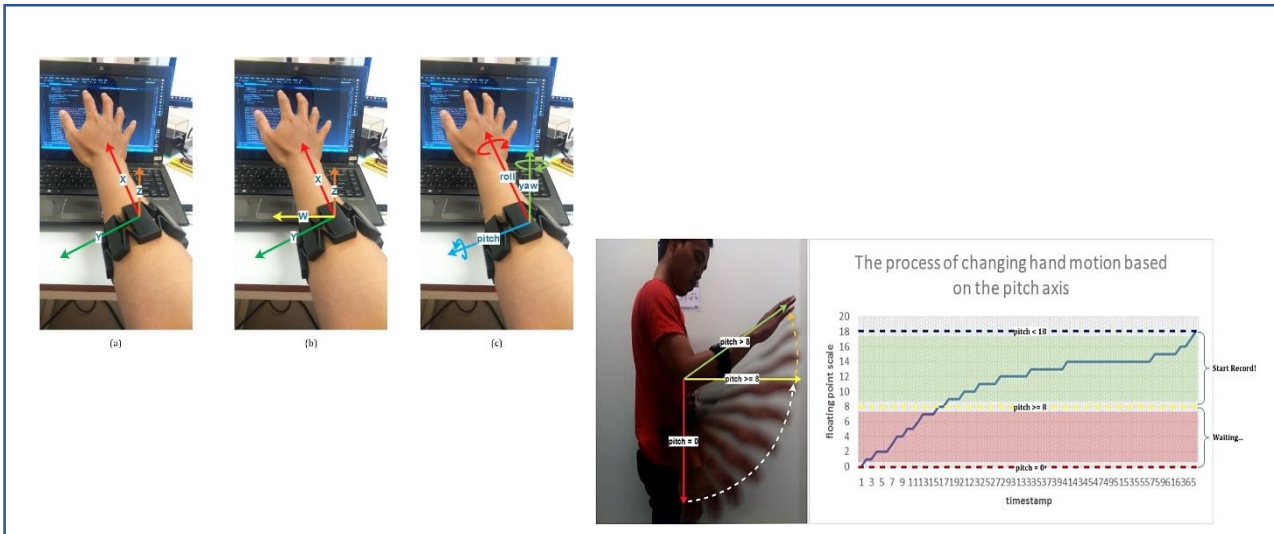
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Sistem Pengenalan Gerakan Bahasa Isyarat



Sign language translator using Leap Motion

Alphabet	80%
Number	88%
Word	68%
Total	79%



Sign language translator using Myo Armband

Alphabet	83%
Number	89%
Word	81%
Total	84%



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LATIHAN FISIK UNTUK USIA LANJUT MENGGUNAKAN TEKNOLOGI KINECT



**Neck
Abduksi-Adduksi**



**Neck
Fleksi-Ekstensi**



**Elbow
Fleksi-Ekstensi**



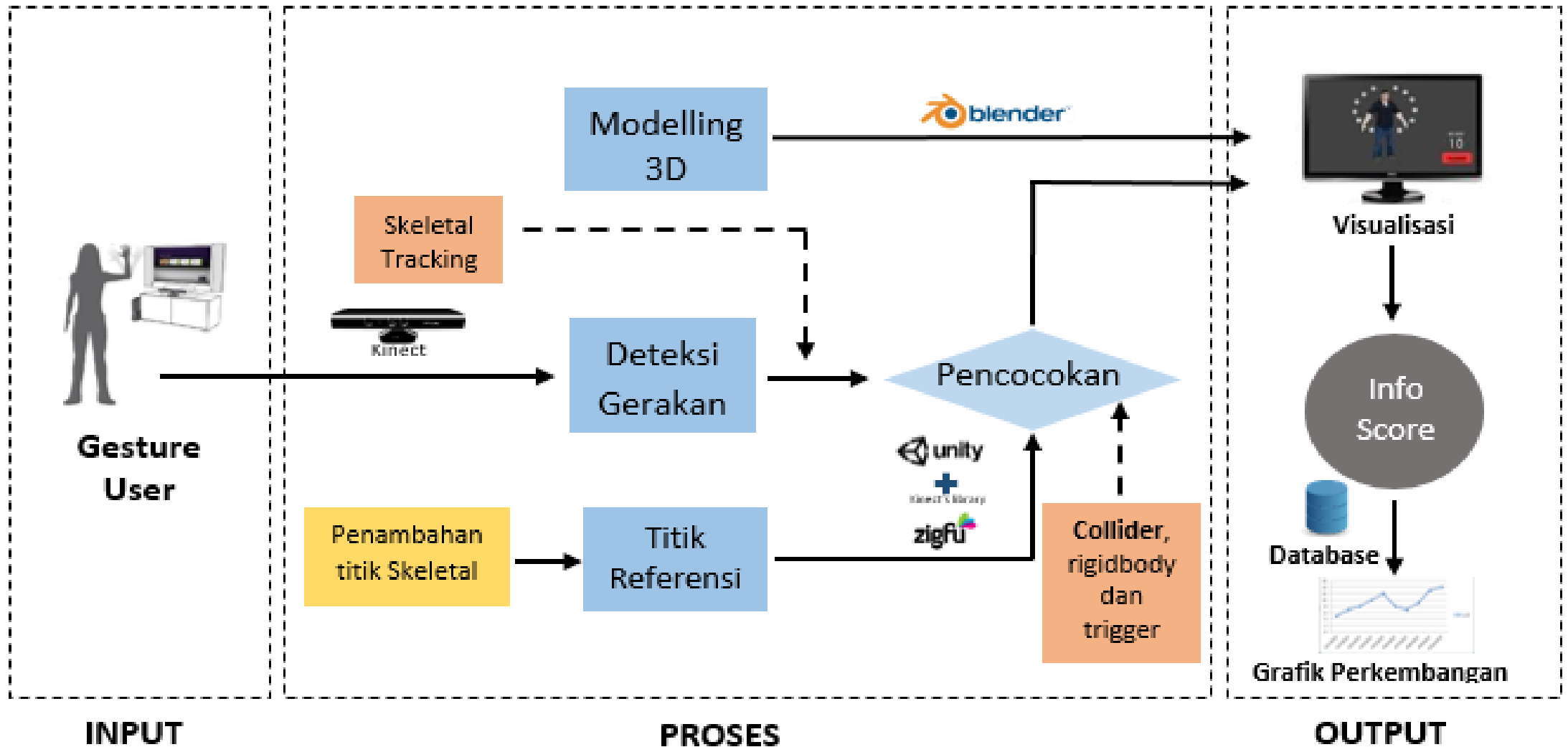
**Wrist
Hiperekstensi**



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LATIHAN FISIK UNTUK USIA LANJUT MENGGUNAKAN TEKNOLOGI KINECT





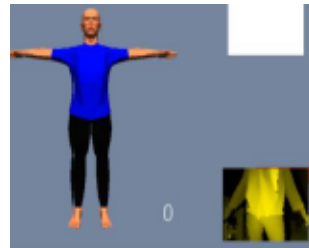
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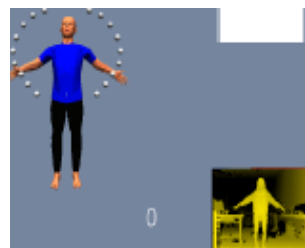
LATIHAN FISIK UNTUK USIA LANJUT MENGGUNAKAN TEKNOLOGI KINECT

Optimal Distance

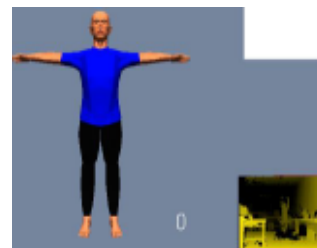
0.5M



2.5M



3.8M



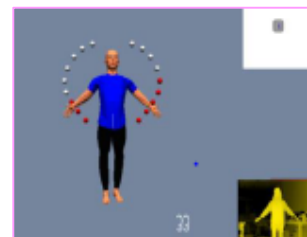
Optimal Distance
1.2 – 3.4 M

Optimal Radiance

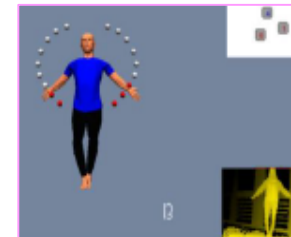
15 LX (NO LAMP)



175 LX (INDOOR)



1200 LX (OUTDOOR)



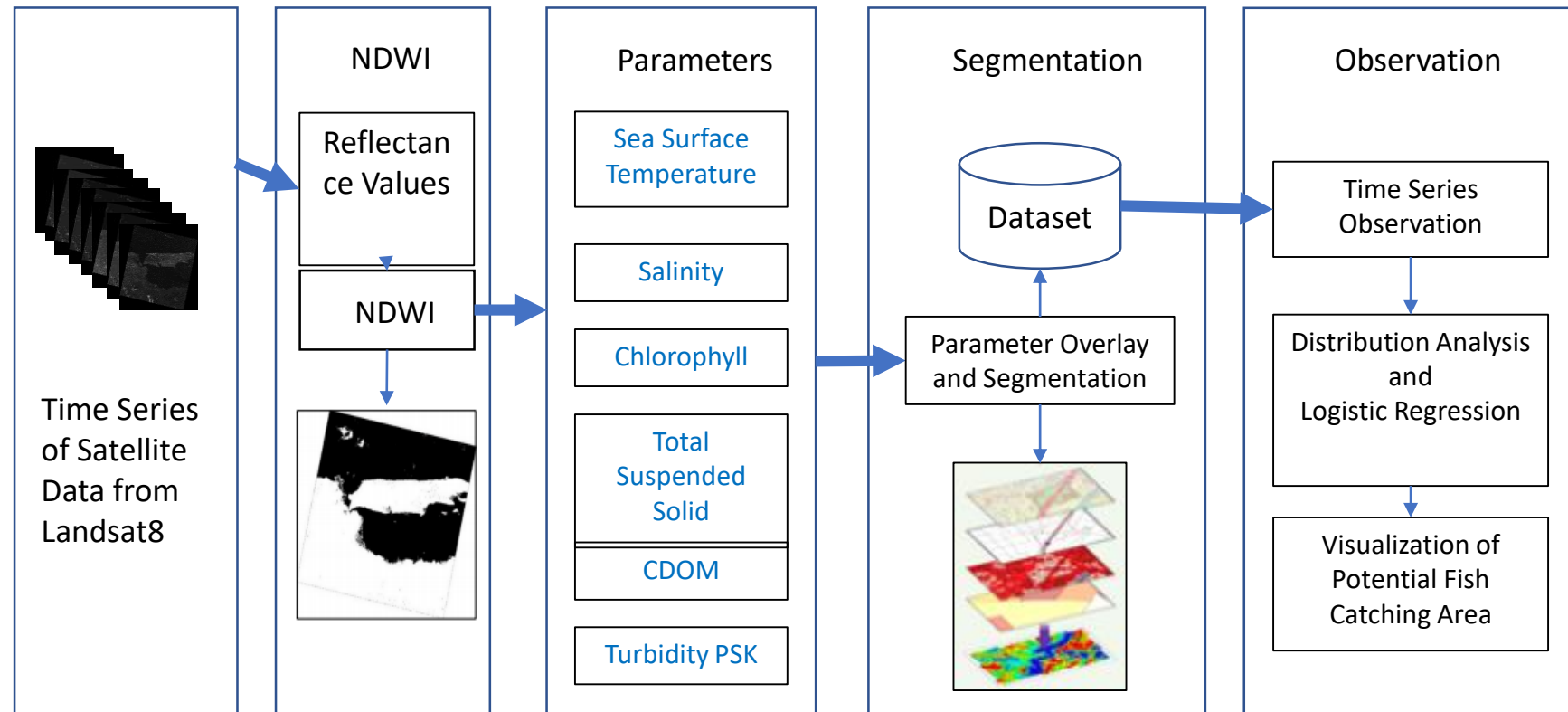
Optimal Radiance
75 – 750 LX



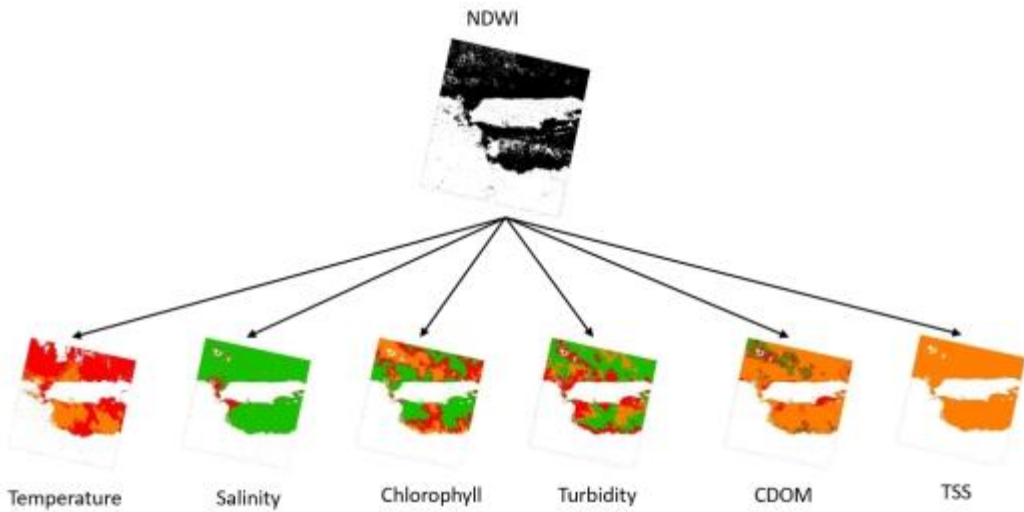
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OBSERVASI POLA SEBARAN IKAN DI SELAT MADURA MENGGUNAKAN SEGEMENTASI CITRA SATELIT



CONTOH HASIL POLA SEBARAN IKAN DI SELAT MADURA PADA TAHUN 2015



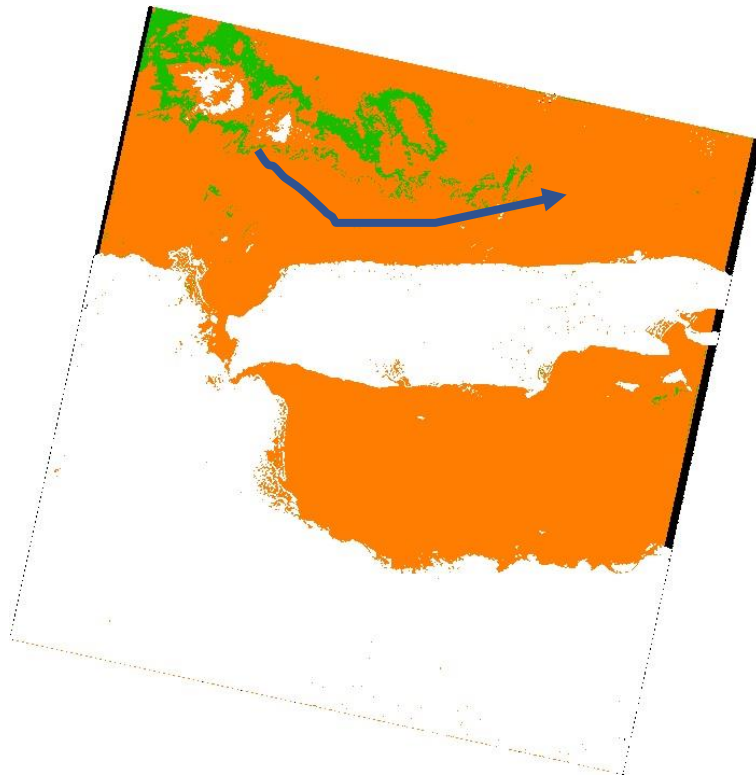


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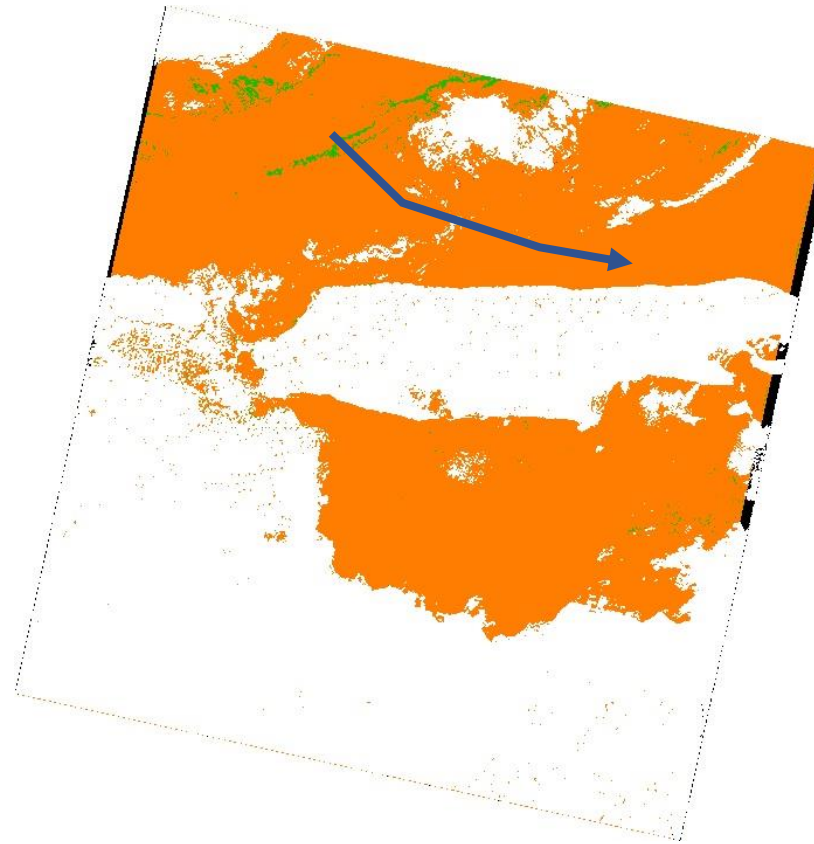
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OBSERVASI POLA SEBARAN IKAN DI SELAT MADURA MENGGUNAKAN SEGEMENTASI CITRA SATELIT

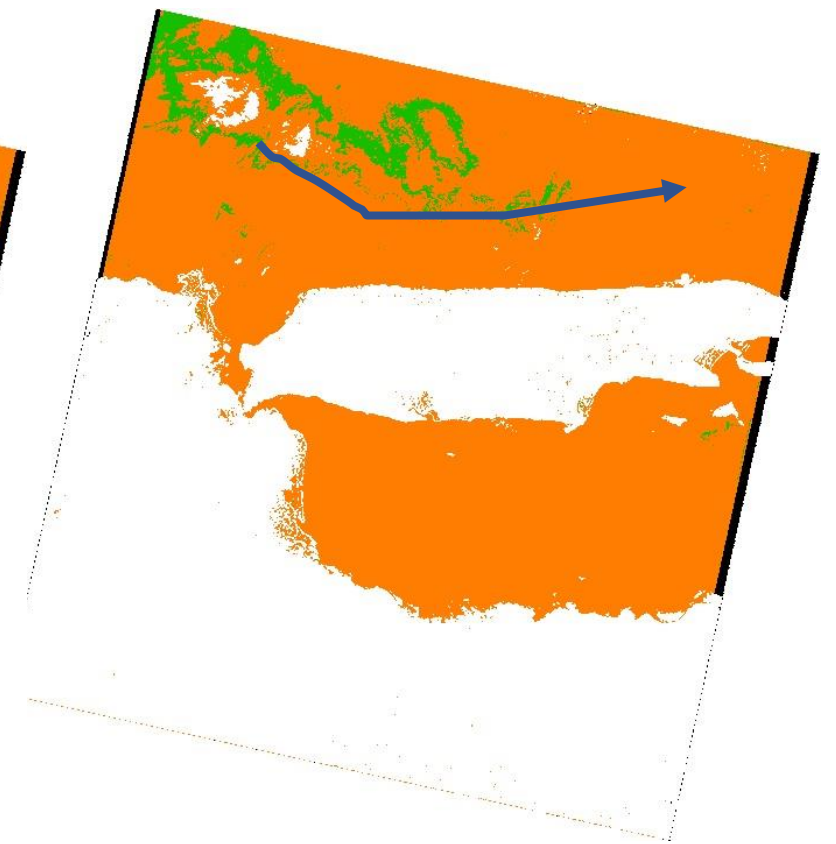
Sebaran Ikan di bulan Januari pada tahun 2015-2017



2015



2016



2017



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VIRTUAL GAMELAN

Bonang



Kendang



Gender



Peking



Gong



Saron



Keneng



Klenthem



Gamelan



We want to play gamelan together with virtual environment, interactive devices and immersive experiences.

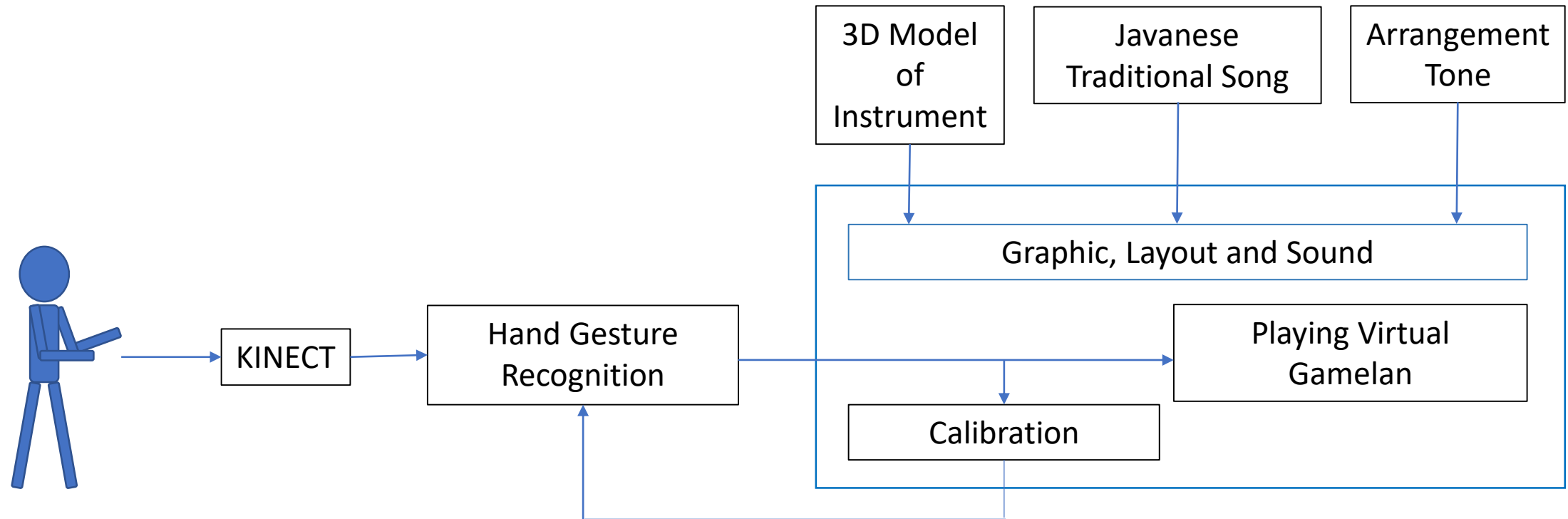
Each instrument has different properties for playing the music.



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VIRTUAL GAMELAN





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VIRTUAL GAMELAN

Select Traditional Song

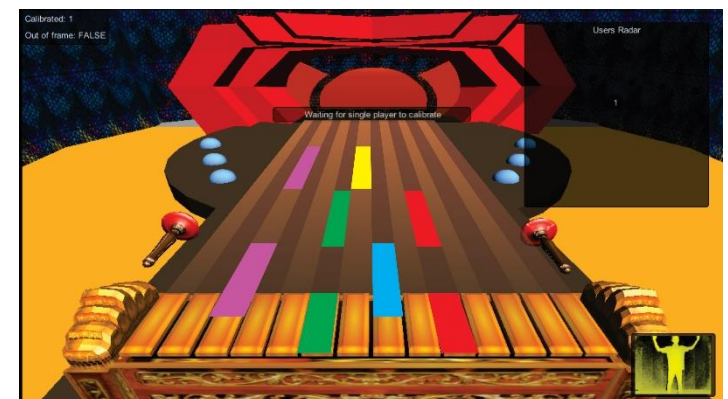
Virtual Gamelan "Saron"



Virtual Gamelan "Bonang"



Virtual Gamelan "Gender"



Play together with different devices



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VISUAL NOVEL FRAMEWORKS

VISUAL NOVEL FRAMEWORKS

How to convert the story into interactive media that useful for learning

Enter Story Text According to given Format

code instructions:

- #bg to add background command
- #sound to add sound / music command
- #choice to add choice
- use ':' and write name before it to add dialog with actorname
e.g. "Als:this is how to use dialog"
- press enter / user breakline to add another command
- anything written not following format will become a narration dialog

Cancel Clear Code Add Story Code

Other VN Framework : Renpy

```
#bg_bg1.jpg
Ah, Hello$yhehe.png$inormal.png
#sound_VinoTheme.Mp3
Welcome$yhappy.png$ihappy.png
```

0	Showing Background					
1	Ah, Hello					
2	VinoTheme.mp3					
3	Welcome					



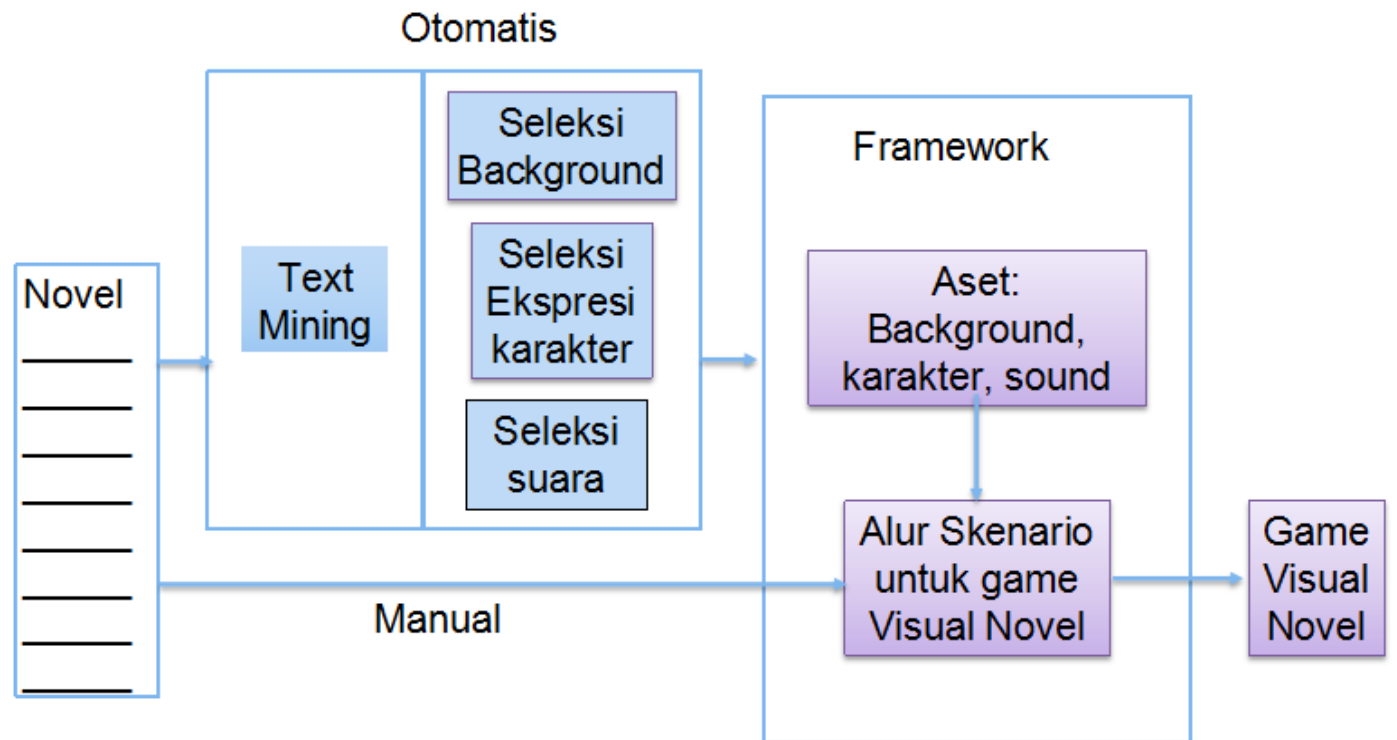


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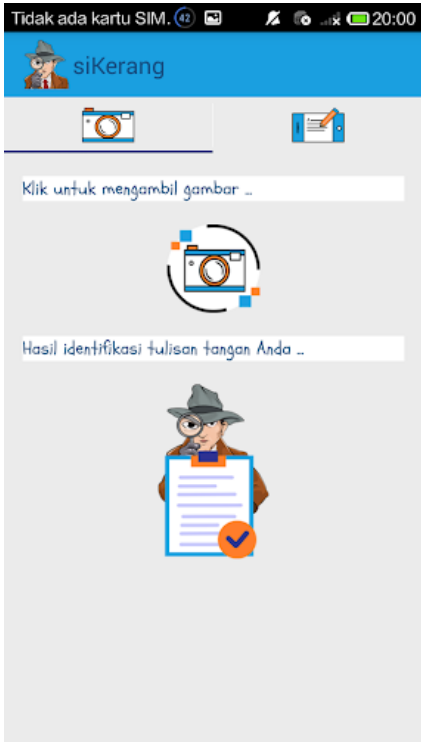
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ONLINE VISUAL NOVEL FRAMEWORK

Siang itu, Rudi bertemu Nana di halaman sekolah.
Rudi menyapa, "Hai, Nana."



Contoh Produk di Google Play

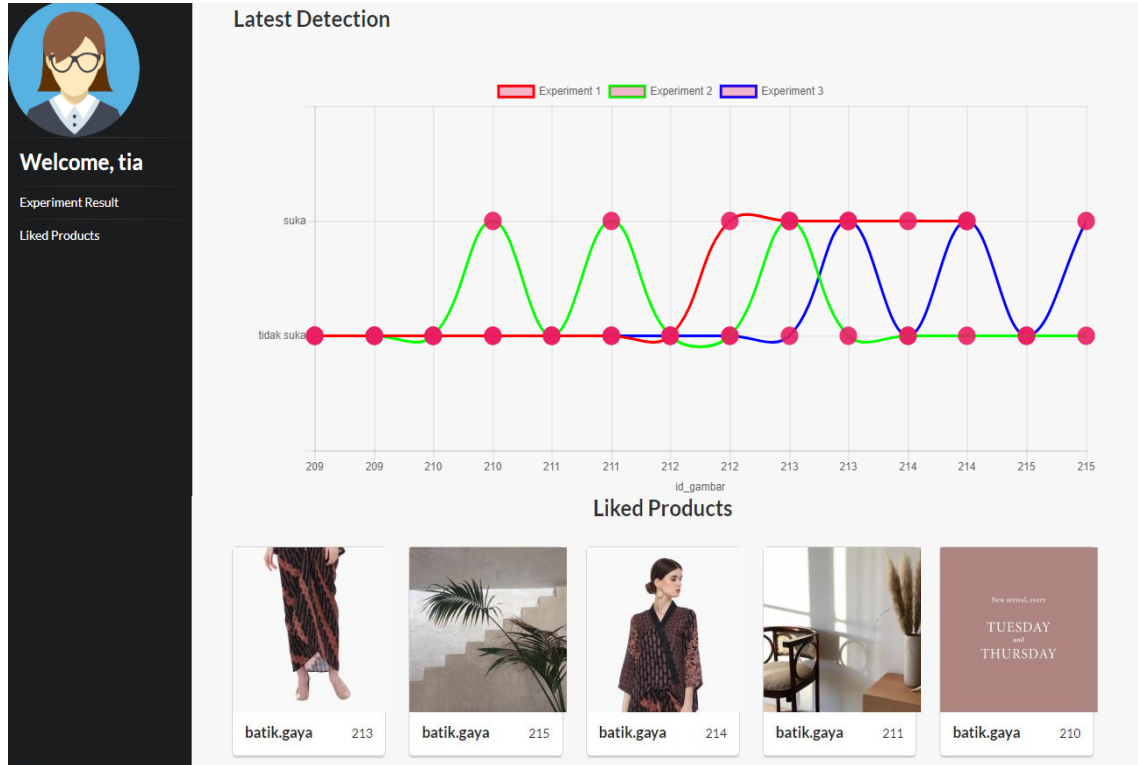


Aplikasi untuk mendeteksi karakter seseorang menggunakan tulisan tangan



Game KUBA (Kisah Utsman Bin Affan) Dengan Convex Hull Algorithm untuk mendeteksi ruang gambar

Penelitian Yang Lain



Aplikasi untuk mengetahui produk fashion apa saja yang disukai berdasarkan perubahan ekspresi wajah



Virtual Tour 3D Candi Jago Malang Sebagai Salah Satu Heritage Site

Neuromarketing & Psycho-affected



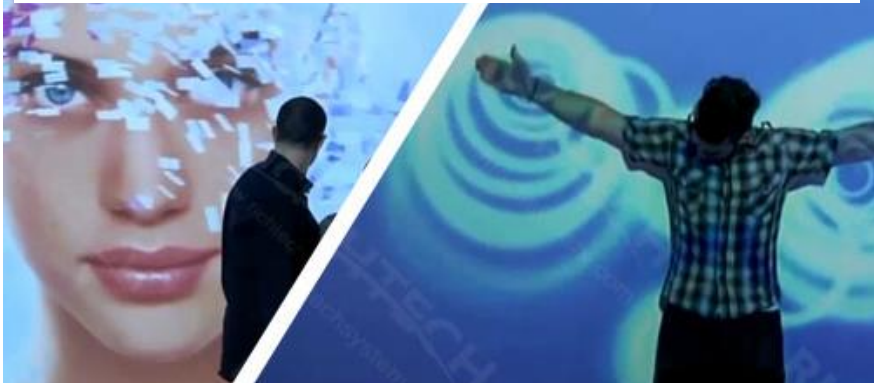
VR-Lab



MPEG K



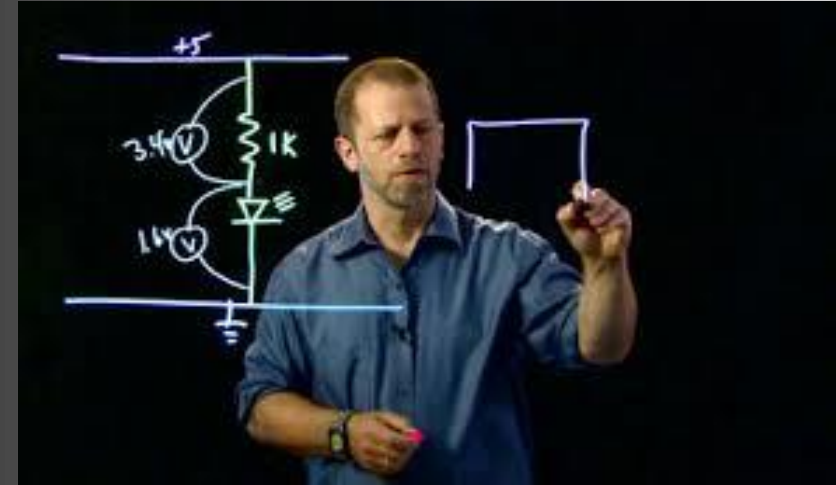
Interactive Projection



Our Research
Next Multimedia Project

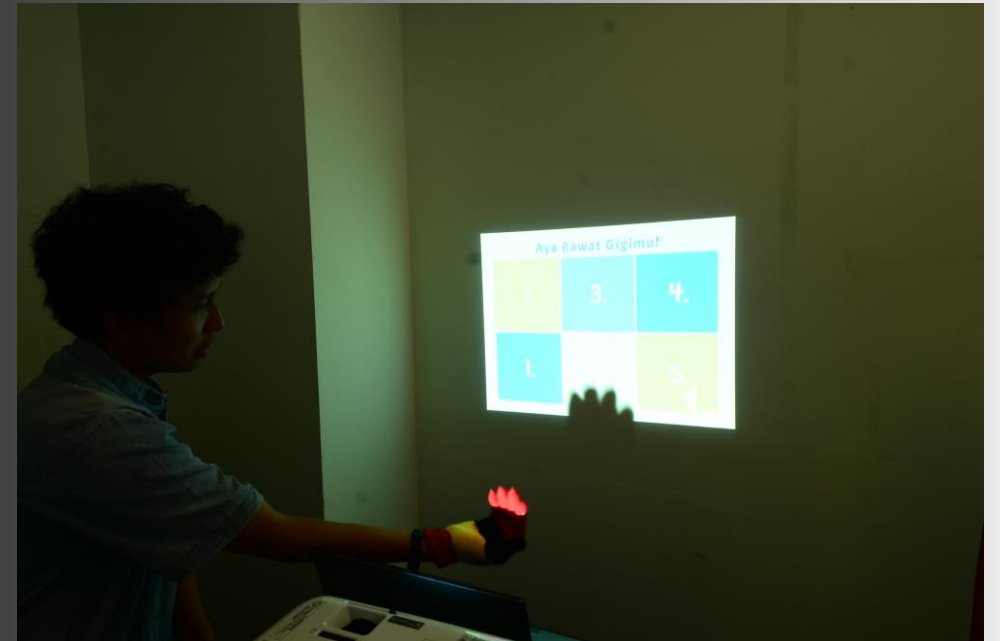
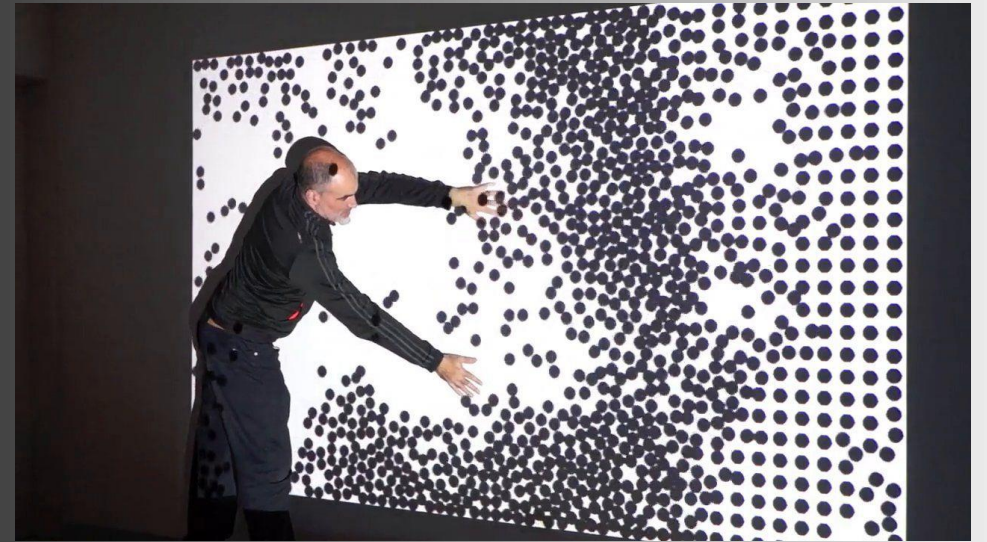
Virtual Lightboard

- Lightboard membuat papan seolah-olah ada di depan guru atau pengajar, sayangnya lightboard ini membutuhkan seting yang sulit dan biaya yang besar.
- Virtual Lightboard memanfaatkan teknologi virtual pada kamera, saat ini masih dalam pengembangan.



Interactive Wall

- Interactive wall adalah bagian dari teknologi interactive projection yang memungkinkan guru atau siswa bisa berinteraksi dengan dinding yang seolah menjadi display dari materi pembelajaran.
- Media ini sangat atraktif untuk memungkinkan siswa aktif.





Terima Kasih