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"Design and development methodologies of Kkongalmon, a location-based augmented reality game using mobile geographic information"

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Miguel Morgado, 55069

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✓ Introduction

✓ Methods
- Aim
- Global Status
- AR Computing Platforms

✓ Discussion
- Development Methodologies
- Location-based Technology using GPS
- Gyroscope sensor-based Technology
- AR Development Interfaces

✓ Conclusion

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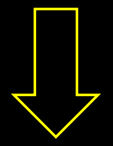
INTRODUCTION

- ✓ Augmented reality » immersion and reality
- ✓ Without extra devices » less restriction in usability
- ✓ *Smartphone* » mobile + important characteristics



Development of location-based applications

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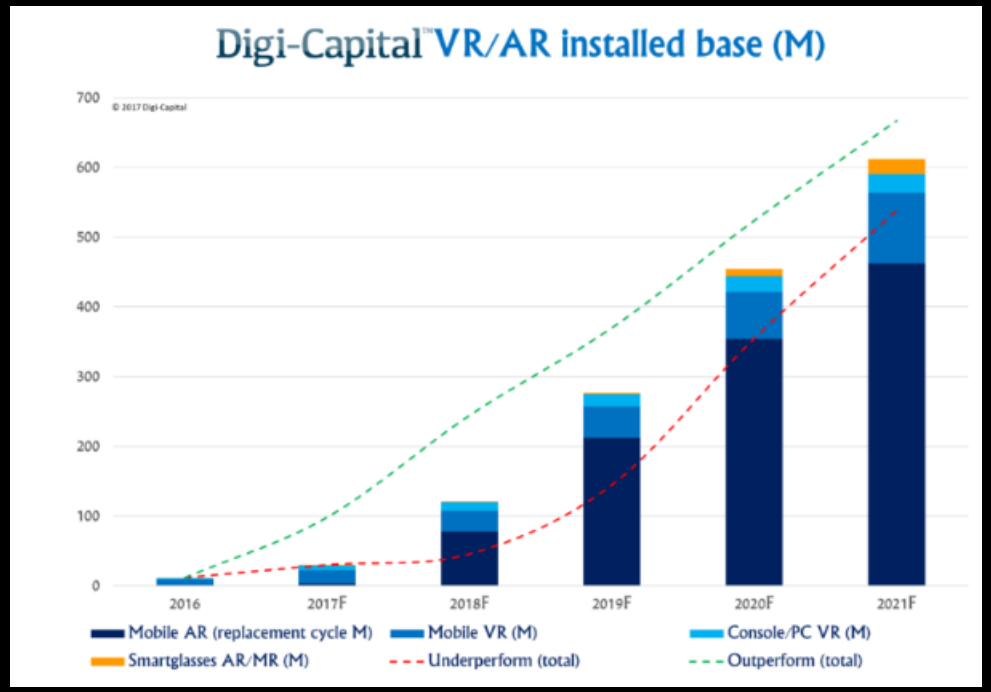
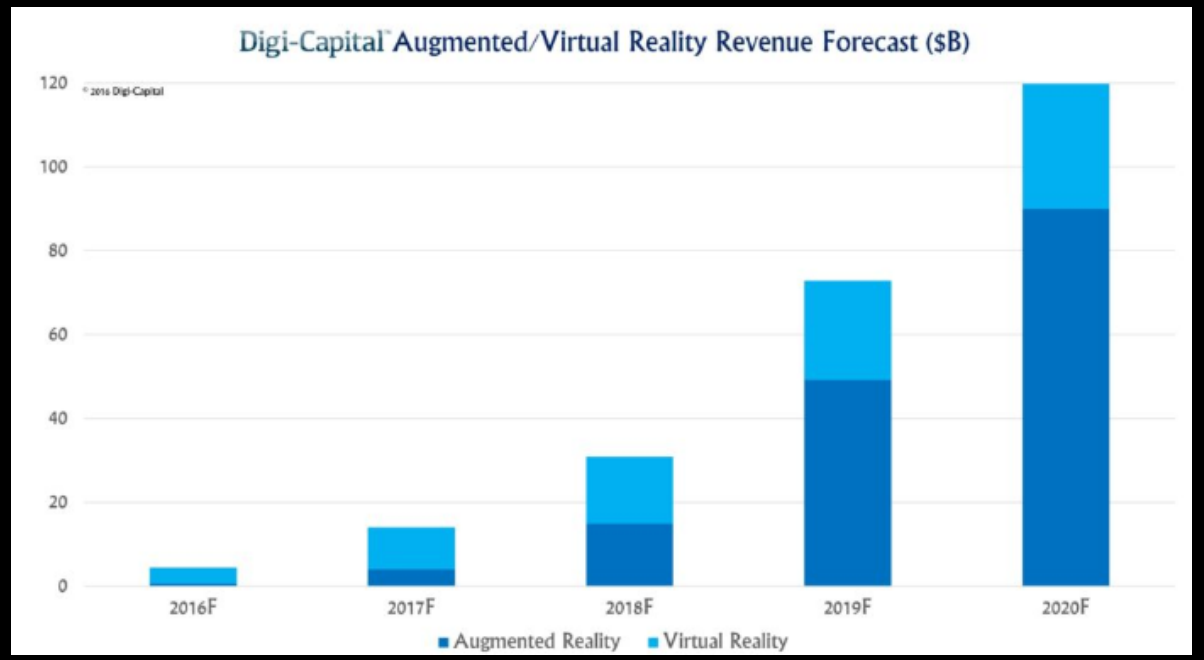


Installed base applications (2016-2021)



Revenue AR/VR (2016-2020)

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METHODS

✓Aim

- » Describing present and future for AR techonology
- » Connection between location-based games
- » Kkongalmon and Pokémon GO
- » Intuitive interfaces

✓Global status of AR game development

- » Niantic - Pokémon GO
- » 2 million $ per/day
- » + than 7 million *downloads* in 7 days
- » Theme Parks

✓AR Platforms

- » Mobility without spatial restrictions
- » Smaller, lighter and portable platforms
- » Mobile phones, RA glasses, computers, tablets

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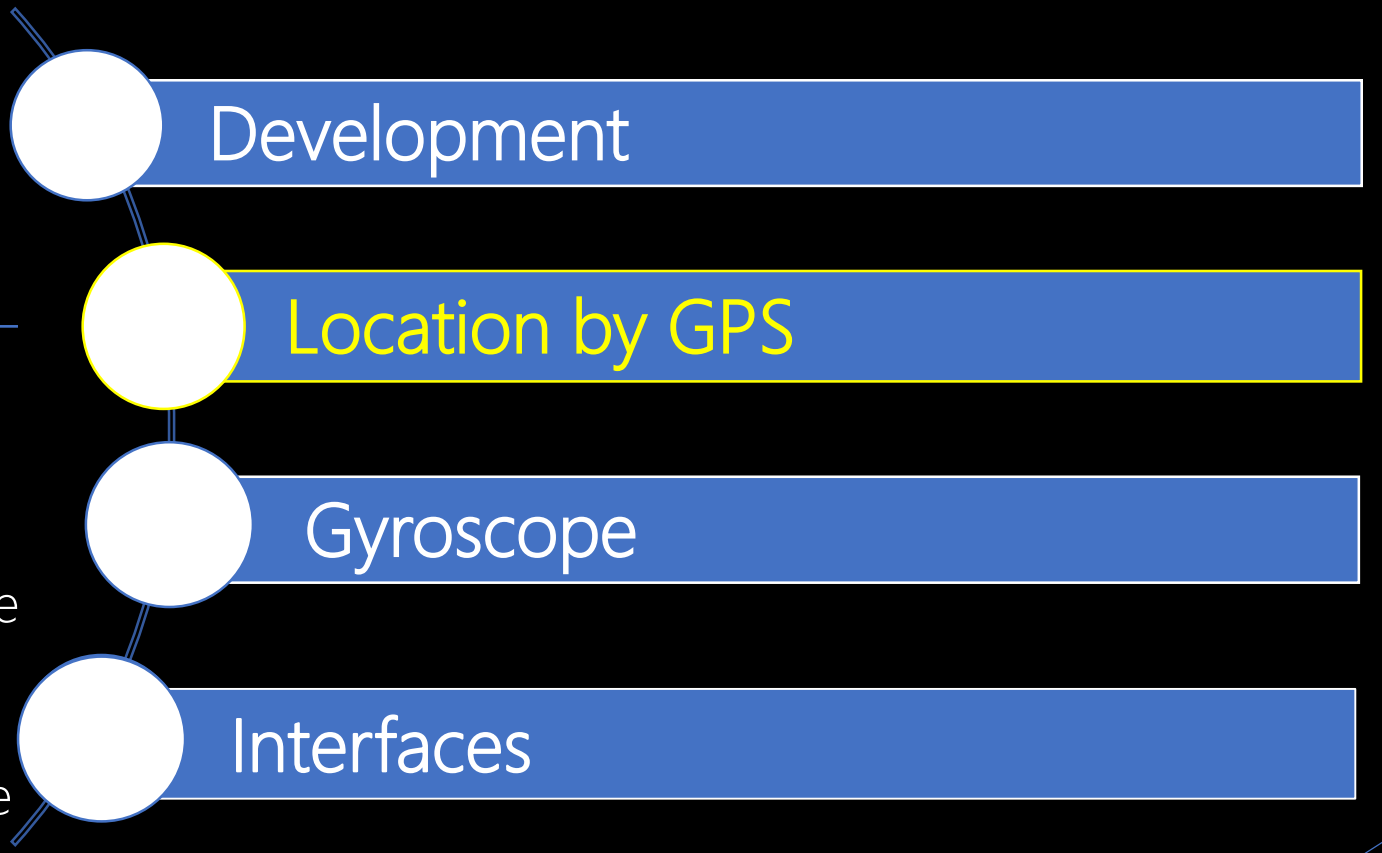
DISCUSSION



- ✓ Location shared
- ✓ Features ON
- ✓ Relation with culture/leisure
- ✓ Errors!
- ✓ Satellite location and time
- ✓ Refraction and Interference
- ✓ Minimize the error

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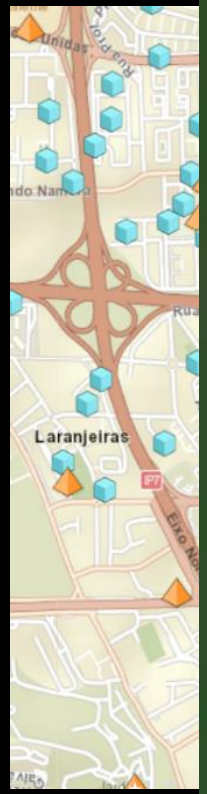
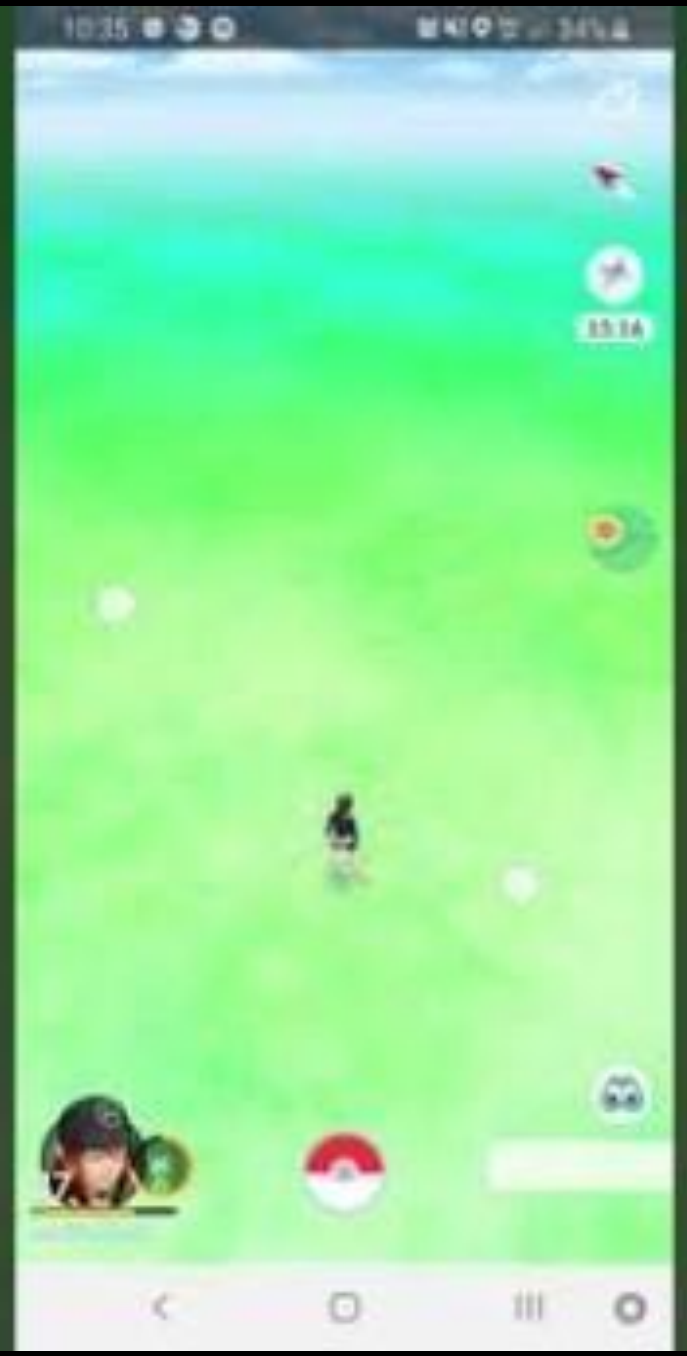


"Mapa Mundo



galmon)

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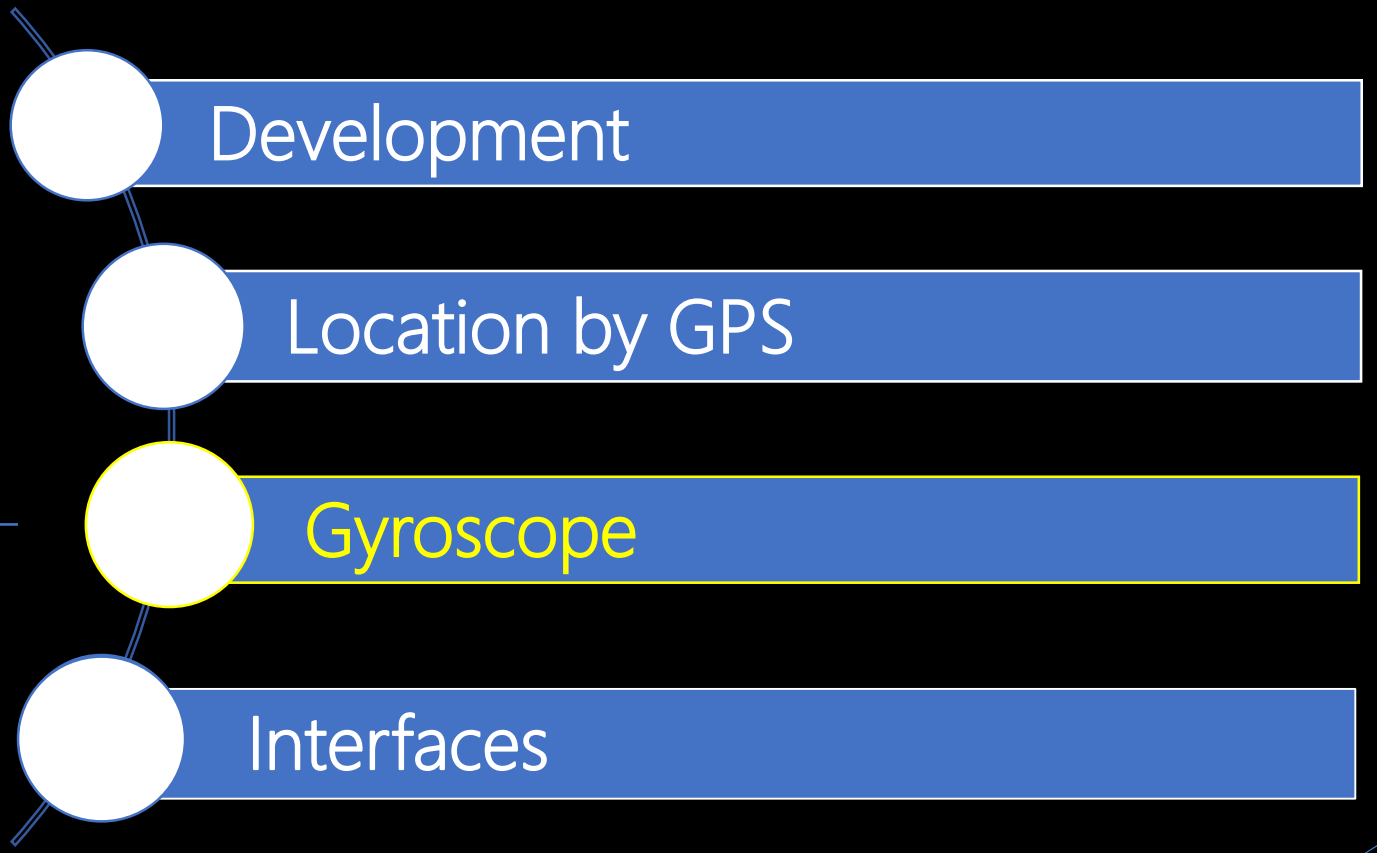
DISCUSSION



- ✓ Rotation and Speed
- ✓ Three-Dimensional Axes
- ✓ Positioning
- ✓ Gravity

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With gyroscope

Without gyroscope

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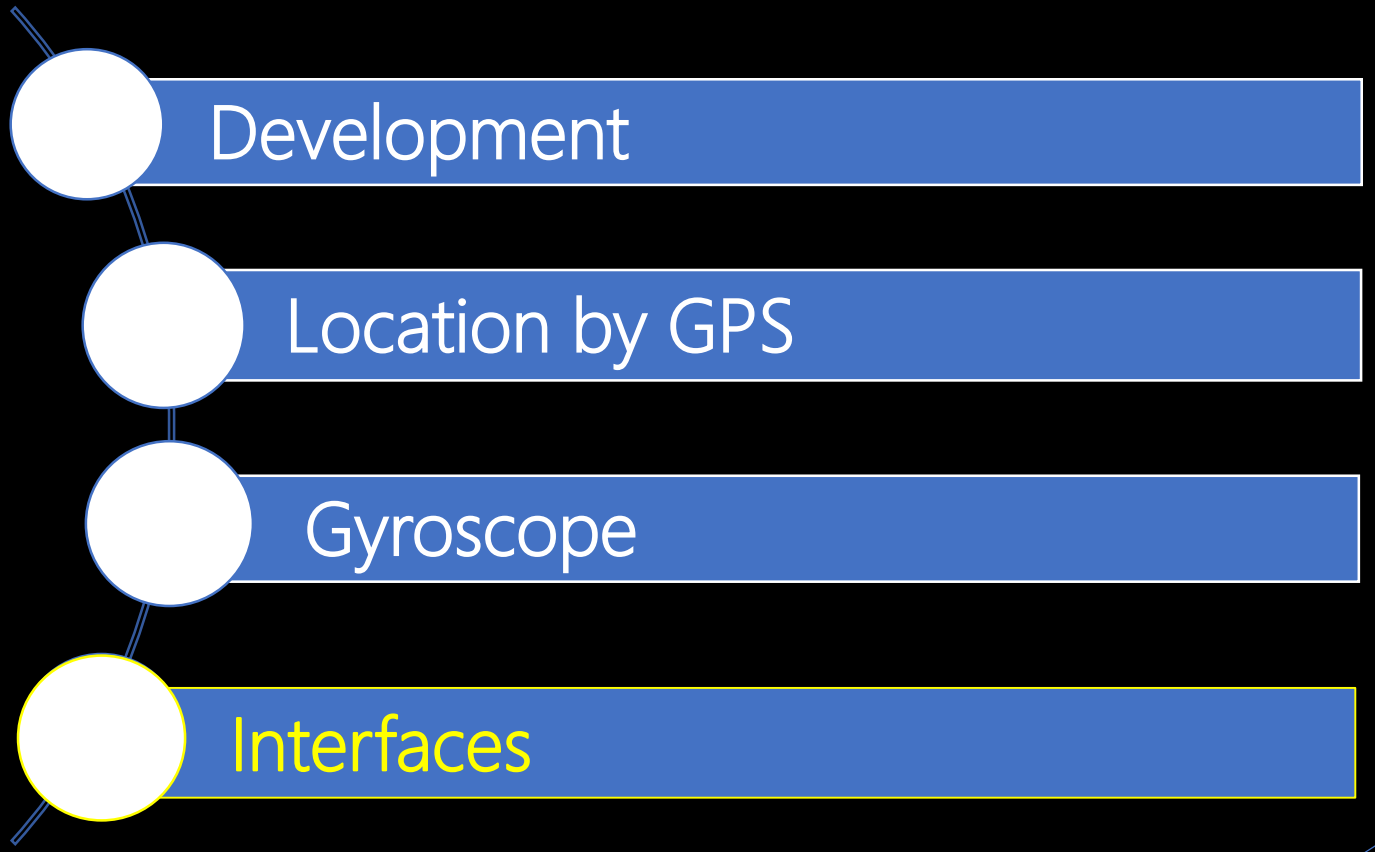
DISCUSSION



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CONCLUSION

- ✓ Growing AR technology
- ✓ Integration with localization technologies
- ✓ Games + dynamics
- ✓ Importance of sensors
- ✓ Future works
- ✓ Use geographic information positively

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