HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY
School of Information and communication technology

GRADUATION THESIS

A system for pose suggestion and photography services

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OUTLINE

1. Problem Description
2. Solution Approach
3. System Design and Development
4. Achievements and Contributions
5. Conclusion and Future work

1 Problem Description

1. Photography services
2. Pose suggestion
3. Related Applications

Photography service

Problem

- **Smartphone** and **limited photography skill** is **not enough** for professional photography.
- **Search** photographer is **difficult**.
- **No** effective way for photographers **reach** potential clients.

Pose suggestion

Problem

- Pose people who **aren't models** is difficult
- Pose to fit **different scenes**

Related application

PhotographMe

Photography Services

- Limitation: Only search by GPS, no way to show direction between photographer and client.
- Appropriate for purposive need, not for accidental need

ULike

SOVS2

Selfie Applications

- Limitation: Only focus on posture. No option for other category: Age, gender, background. No pose filter feature
- Appropriate for selfie purpose.

2 Solution Approach

1. Main features
2. Platform
3. Technology

Main features

Normal user

- Filter poses
- Search and connect to photographer
- Create, manage and share photo album

Photographer

- Set location
- Chat with client
- Create, manage and share photo album

Administrator

- Manage database

Platform

Mobile application for **normal user** and **photographer**.

- Almost by side. Easy to use anytime, anywhere.
- Support searching poses during photography process.

Web application for **administrator**

- Easy to observe information of system.
- Easy to manipulate data.

Technology

Technology and Background knowledge

Firebase

Cloud Firestore

Cloud Functions

Cloud Storage

ReactJs

React Native

NodeJs

QR Code

ad7h1wq

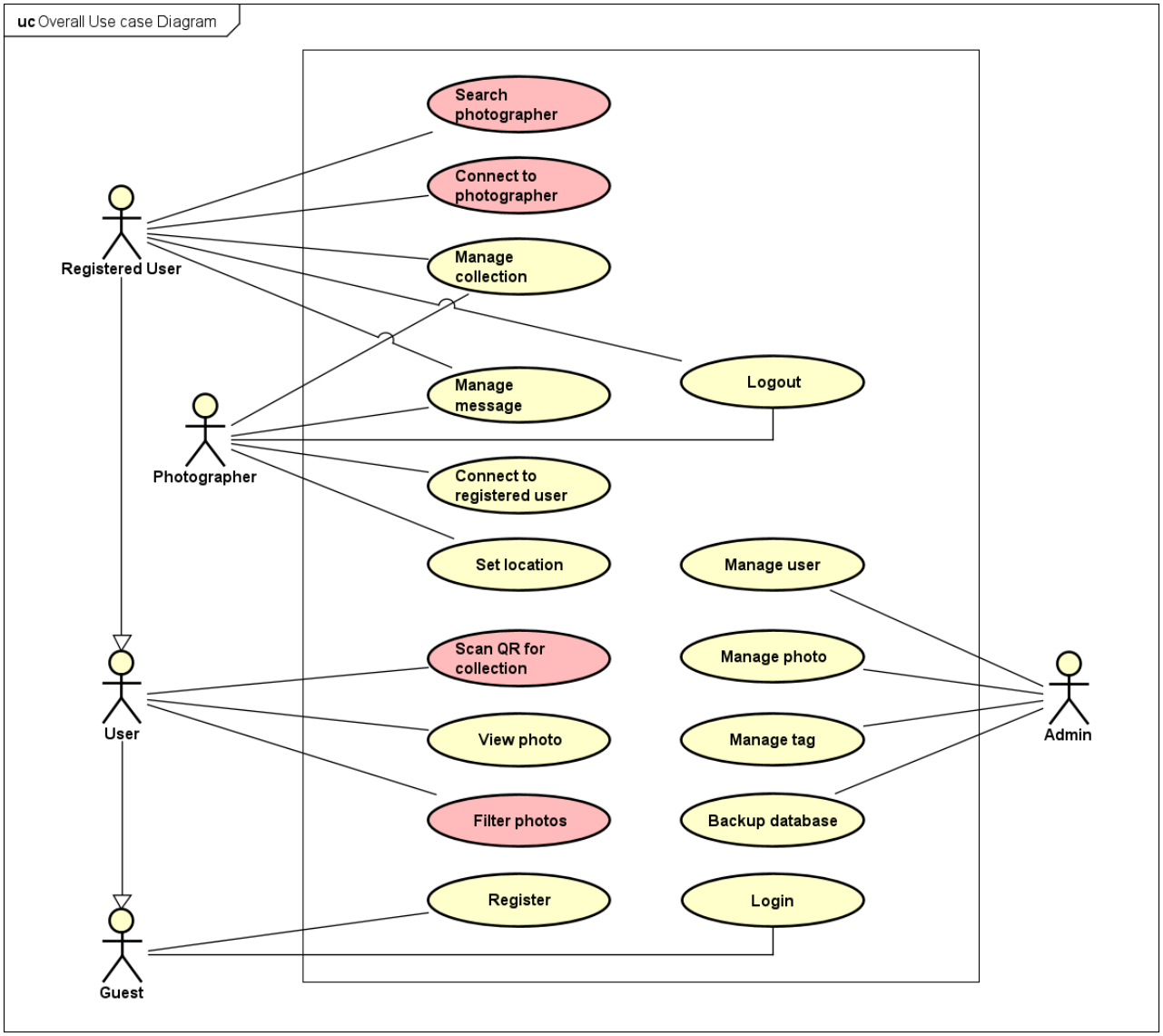
Geohash

3 System Design and Development

Photo hub

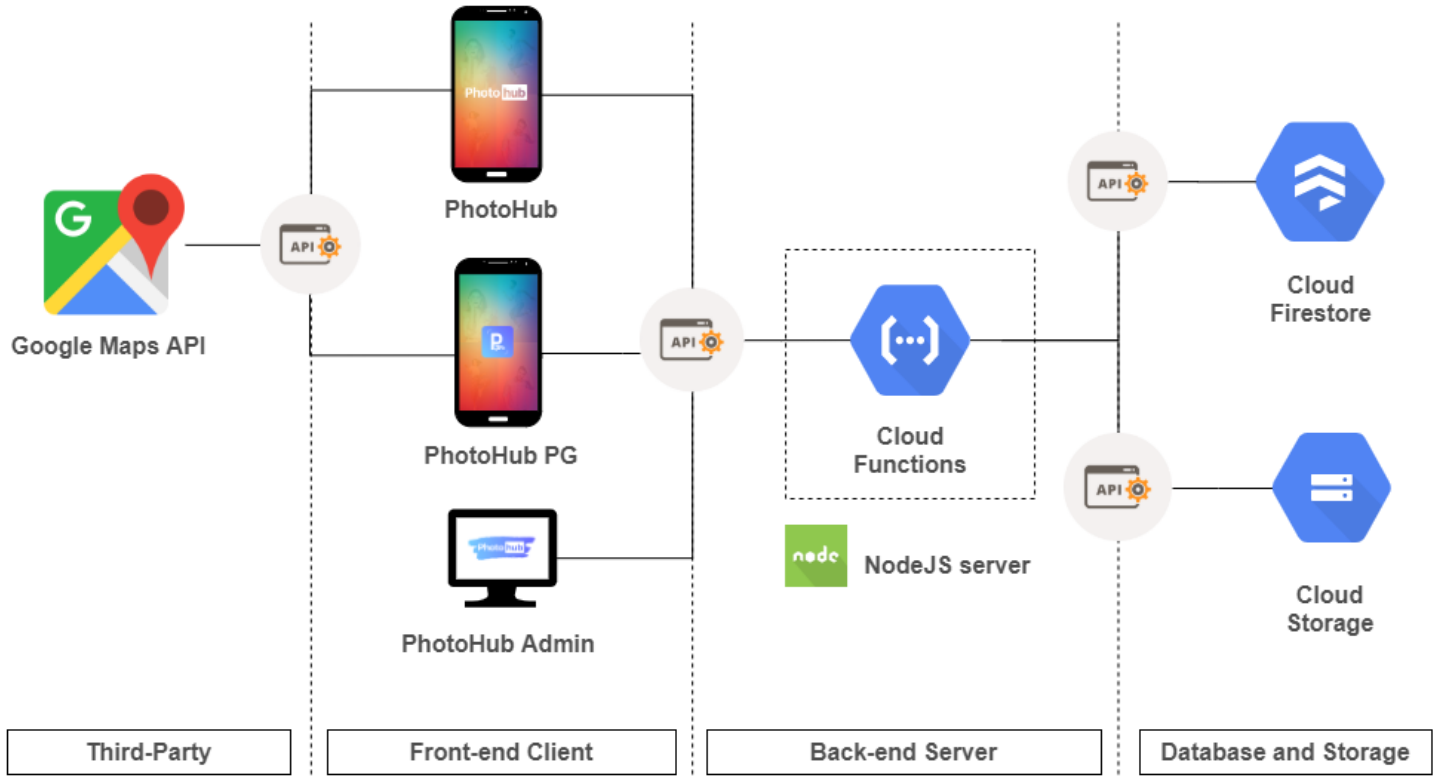
1. Overall Use case
2. System architecture
3. Conceptual data model
3. Achievements

Overall Use case



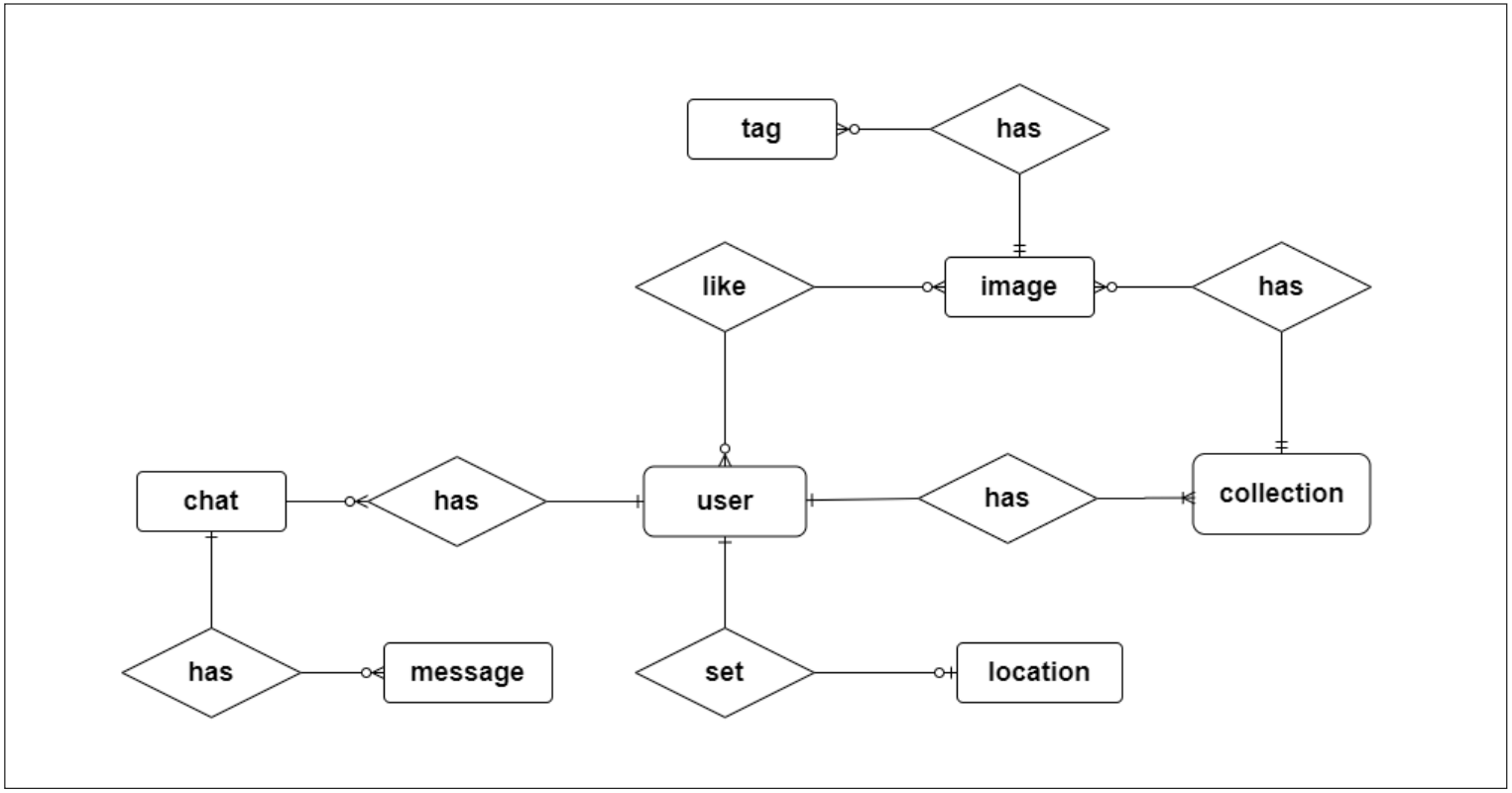
System architecture

- System architecture

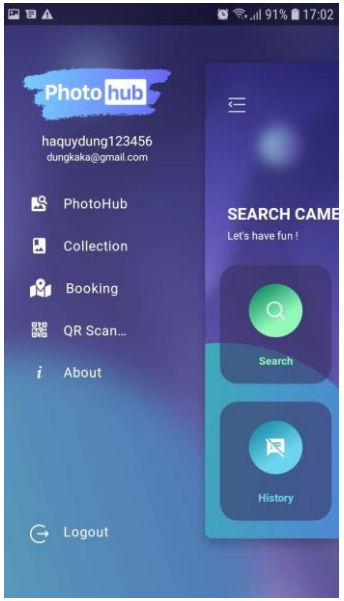


Conceptual data model

- Entity Relationship Diagram

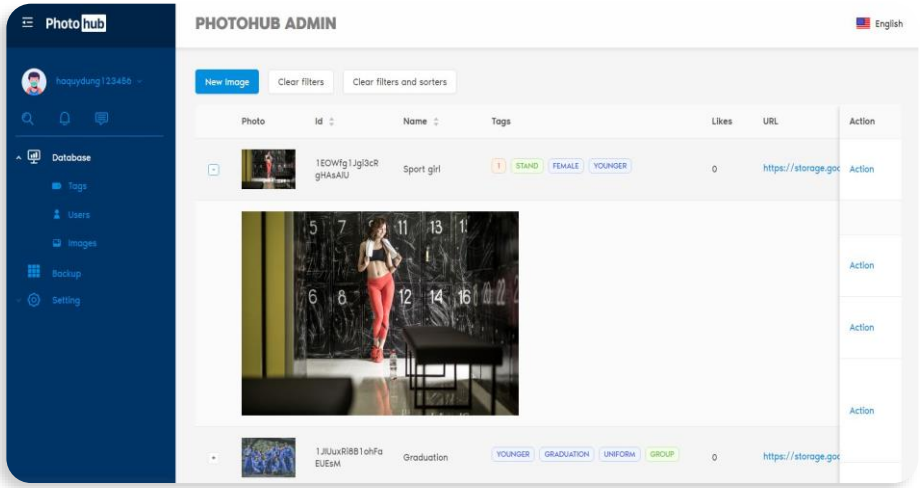


Achievements



PhotoHub

PhotoHub PG



PhotoHub Admin

4 Contributions

1. Search nearby photographer using geohash
2. Create friendly UI/UX with Map Interface
3. Share collection by QR Code
4. Filter photos by tags and category

Search nearby photographer using geohash

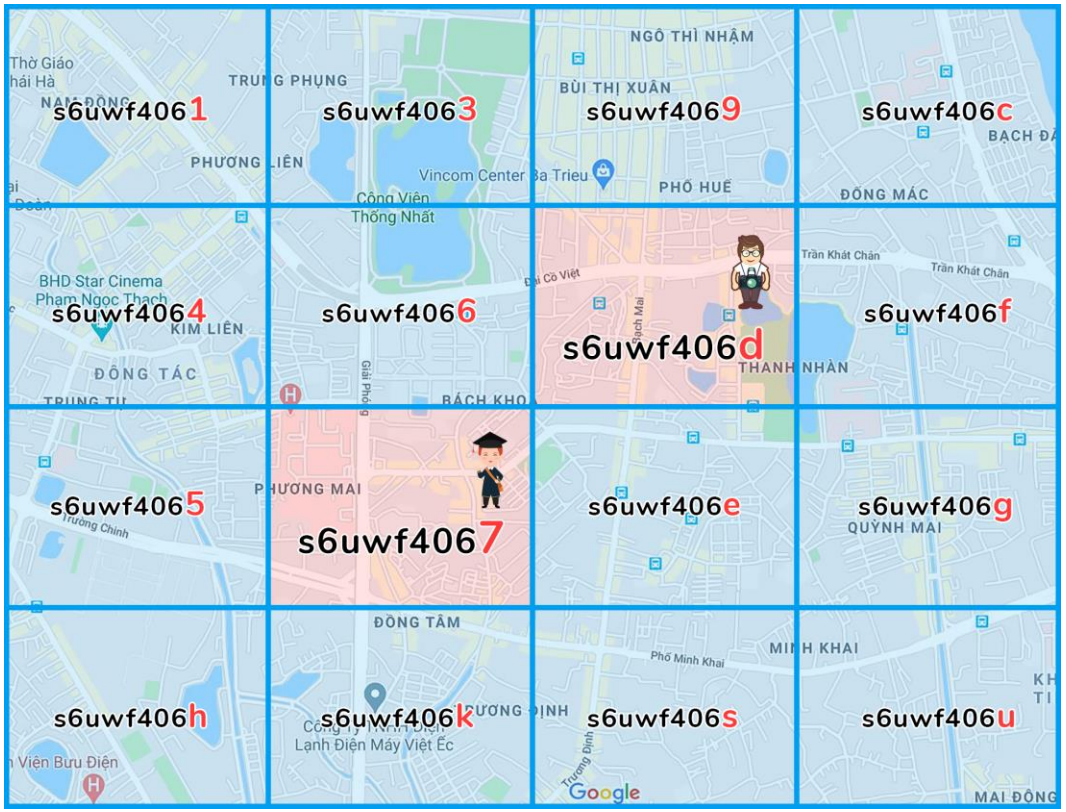
Problem

- Performance in searching
- Firestore billing price

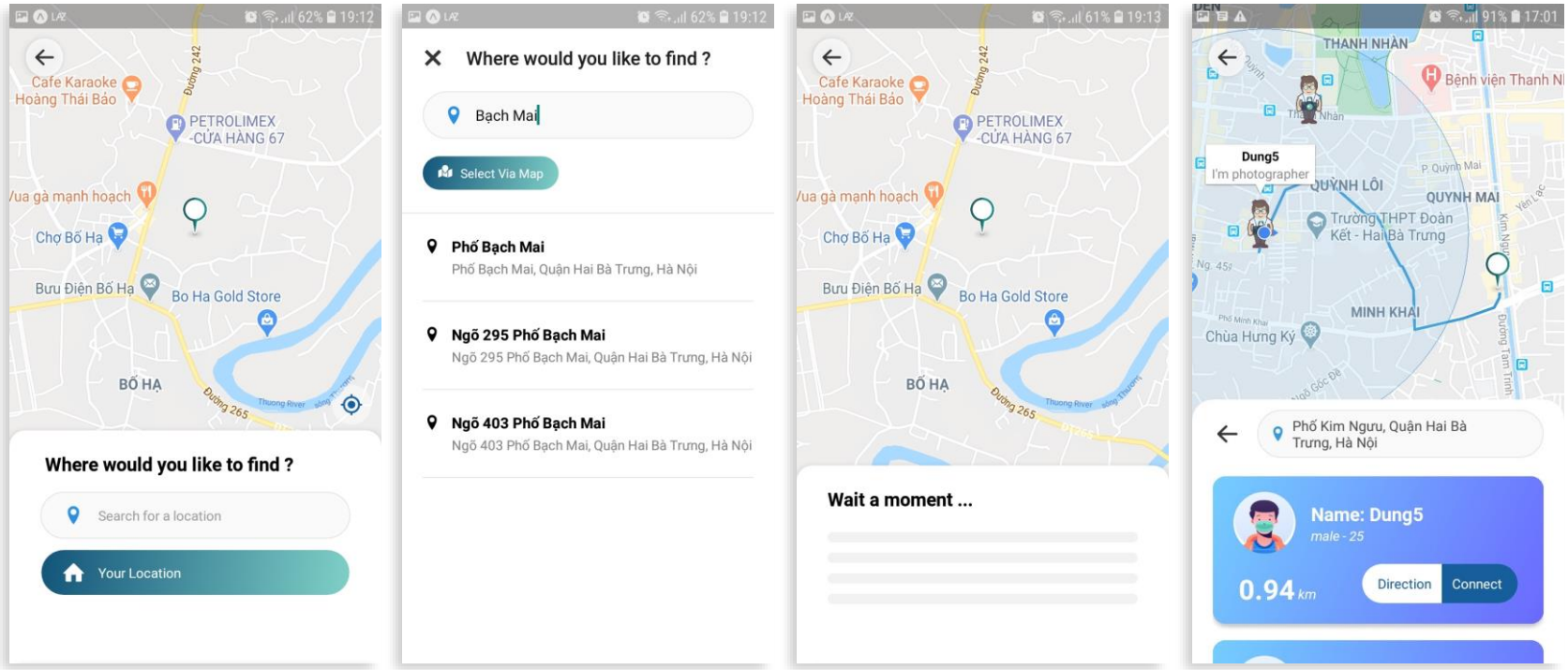
Solution - Using **geohash**

- **Don't need to calculate distance** for all location record.
- Simple save location as a **string**, so can index this field.

=> Improve query performance



Create friendly UI/UX with Map Interface



4. Main contributions

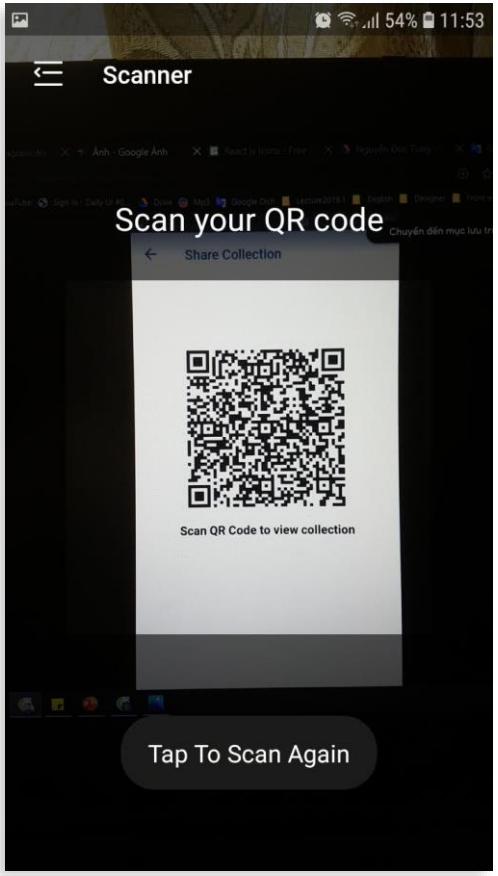
Share collection by QR code

Problem

- User (Photographer, client) need a convenient way to **share pose collection.**

Solution - Build sharing collection by QR code feature

- A QR code will be automatically created when user choosing share function
- Partner just need to use app and scan QR code to receive collection



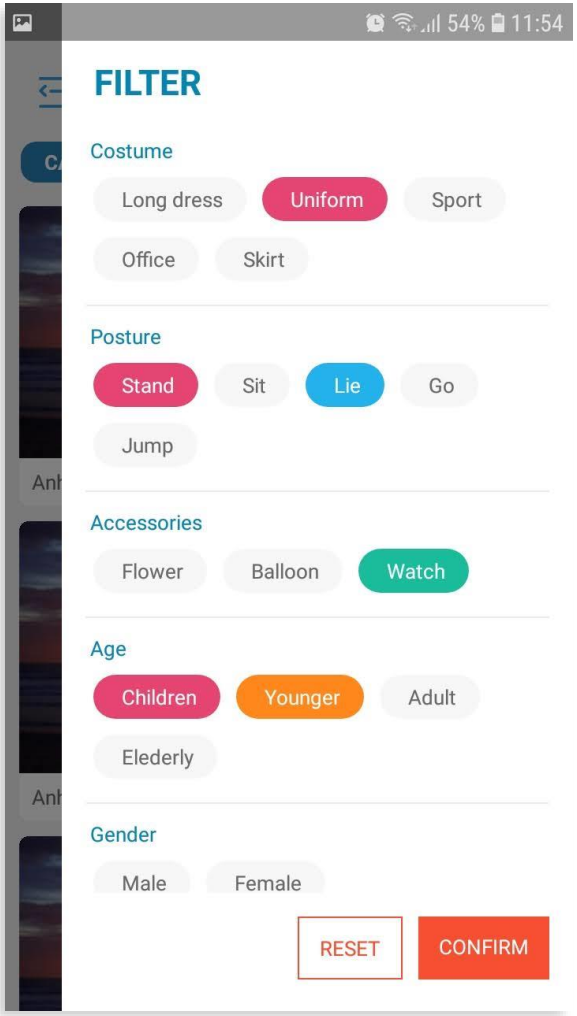
Filter photos by tags and categories

Problem

- Each photo need something to describe it
- User need a good behavior to search poses

Solution - Filter photo by tags

- Each photo is described by some tags
- UI/UX: Provider two ways for searching. Filter by **tags** and filter by **categories**



5 Conclusion and Future Work

1 Conclusion

2 Future Work

Conclusion

Summary

Building successfully three applications for three types of user. Completed implement almost basic features for system.

Drawback

- Doesn't solve the commercial problem in photographer and client connection

Future Work

- Research and develop more approaches of **searching or filtering photos**.
- Research and implement feature that solves **commercial problem** in photographers and clients connection.
- Improve performance and user experience.

QUESTION AND ANSWER !