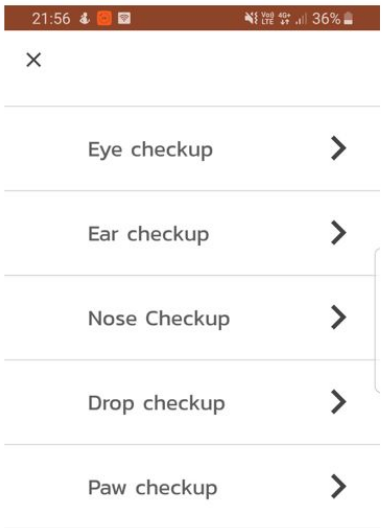
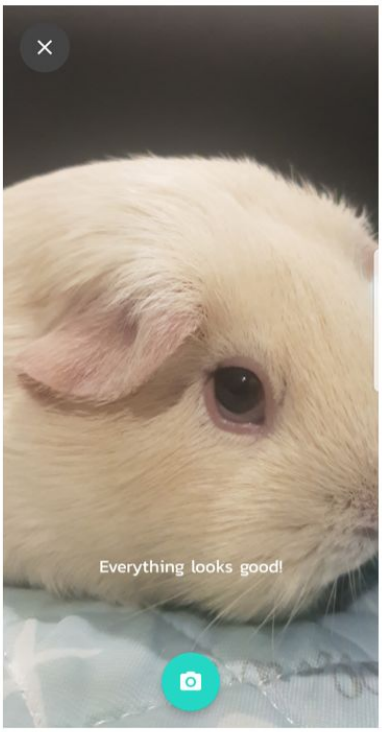
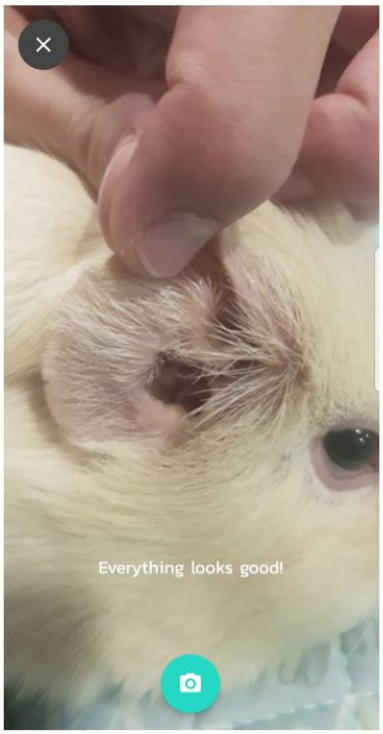
Tell us what your idea is.

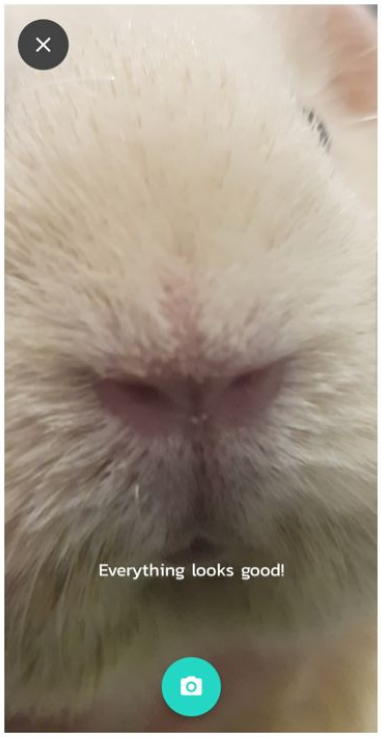
We develop a mobile application called **Pet Carer**. It is a pet health observation and diagnosis service for pet owners. Being healthy is essential for every living thing, including animals who cannot tell us that they are sick. Recently, our first beloved pet passed away because we lack the knowledge to perform observation and evaluation on her efficiently. We do not want this tragedy to happen again to any pet lover or us.

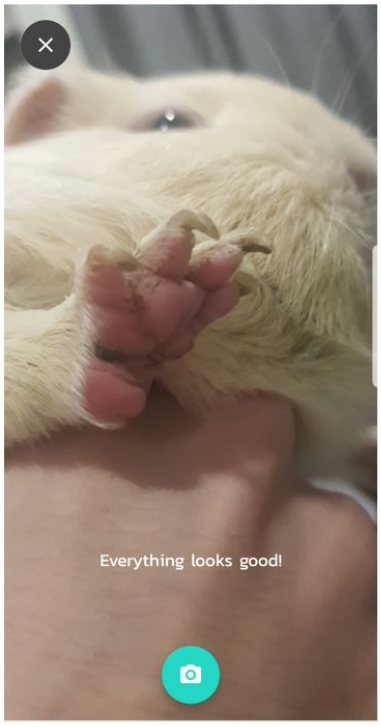
Performing health-checkup on pets regularly can help to prevent unpredictable tragedies from happening. Traditionally we would take our pet to vets for diagnosis. However, Pet Carer can help you perform initial diagnosis by yourself as well as help the vets to understand your pet better.











The **on-device machine** makes pet health-checkup by mobile applications possible. Pet Carer application performs five necessary checks, including an observation on the respiratory organs, eyes, ears, paws, and drops separately. The app uses photos and videos related to each inspection combining with pet's physical information, such as weight records as inputs to our machine learning model to determine the healthiness result of each check. The diagnosis will work seamlessly with no latency, even without an internet connection, and the user can choose to keep the diagnosis information secret.

We plan to make the application for supporting guinea pigs first then expand the service to other popular pet categories. The beta version of the app can be found on the Google play store with basic functions, like taking notes and recording weight.

GET IT ON Google Play

Or pet-carer-v1.0-beta.apk

(if the app hasn't been approved on the google play store)

Tell us how you plan on bringing it to life.

- *(1) any potential sample code you've already written,*

  We have launched the beta version of the app with basic functionalities to play store. Currently, we are developing the health-checkup feature which utilizes on-device machine learning power. We use Firebase services such as Cloud Firestore, Firebase Authentication, Firebase Storage, and other Firebase services to manage and store all of the application data. The progress of this feature can be seen in the sample code in this link (https://github.com/BenBoonya/android-pet-carer). In short, we will use the Android Firebase ML Kit along with pre-trained Tensorflow Lite models to classify and analyze the pet images. The models are hosted on the Firebase project and will be updated automatically.

- *(2) a list of the ways you could use Google's help,*

  1. Collecting categorized pet images for training the models. By using Google help will be able to ask for cooperation from the pet research center or universities much more comfortable. This link is a sample of the guinea pig-related research papers that is very beneficial for the model training process.
  https://www.researchgate.net/publication/280246223_Diseases_in_pet_guinea_pigs_a_retrospective_study_in_1000_animals

  2. Mentorship to efficiently train the model to recognize problems or symptoms of the image of specific are of pets.

  3. Reach more audiences to gain more feedback from the real user for improving the application.

- *(3) as well as the timeline on how you plan on bringing it to life by May 1, 2020.*

  We plan to develop the Pet Carer application from December 2019 to May 2020 with five main processes.

  December 2019

  We will continue developing and testing the basic features like authentication, weight record, and others then launch the public beta version of the application to the play store .

  January to Mid-March 2020

  We will find the data set and train model for the health check-up feature, which includes the respiratory system, excretory system, eyes, paws, and ears.

  Mid-March to Mid-April 2020

  The trained models will be available for usage, we will bring these models to integrate with the health check-up features and develop continually to get the completed application.

  Mid-April to End of May 2020

  We will gain the users, analyze the application performance, and improve the application from the users' feedback.

  After May 2020

  We must maintain the application and plan to develop the new feature for serving the existing users and gaining the new coming users.

  The detail of the project timeline is in this below link.

  https://docs.google.com/spreadsheets/d/1MWbPobGMfx0NviYfka8aLY7HucMKonwexW1N22w_bCU/edit?usp=sharing

Tell us about you.

My name is Boonya Kipitak, responsible for developing the Android application for the team. I'm an Android developer and Machine learning enthusiast based in Thailand. I have been working with Android development in the professional environment for more than four years. Here are links to the google play store of the apps that I have taken part in from the ground up.

- https://play.google.com/store/apps/details?id=com.minor.pizzacompany
- https://play.google.com/store/apps/details?id=com.minorfoodgroup.one1112.one

I have also been a speaker at tech events such as Thailand Mobile Conference 2018, Android Bangkok Conference 2019, etc. I love writing a blog about Android, as well as create demo repositories on Github.

Medium: https://medium.com/@boonya.kitpitak
Github Android Demo Repository.

- https://github.com/BenBoonya/android-pokemon-info
- https://github.com/BenBoonya/calling-webservice

Slideshare: https://www.slideshare.net/BoonyaKitpitak

You can find out more about me here.

- https://www.linkedin.com/in/boonya-kitpitak/
- https://stackoverflow.com/users/4997660/boonya-kitpitak
- https://www.credential.net/credential-redirect/jc88ybcl

Apart from me, there are also talented resources to help the app grow strongly in terms of business and marketing.

Next steps.

- Be sure to include this cover letter in your GitHub repository
- Your GitHub repository should be tagged #AndroidDevChallenge
- Don’t forget to include other items in your GitHub repository to help us evaluate your submission; you can include prior projects you've worked on, sample code you've already built for this project, or anything else you think could be helpful in evaluating your concept and your ability to build it
- **The final step is to fill out this form to officially submit your proposal.**