**Technical Report – Group Project**

**COSC310 – Software Project Management**

**Team Crocodile**

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**Introduction**

**Project overview**

The time and effort required to manually sort and classify images is significant and painstaking. The collection of field data and the processing of said data needs to be automated and streamlined in such a way that the database of information can dynamically update as new data is collected. These efficiency gains would allow end users to easily access up to date data as they require it. The client has provided their predictive model for the automatic classification of drop bears across various camera trap deployments. The aim of this project is to deploy this model (via a Cloud based platform) and to develop a means for users to interact with the output prediction data.

**Goals of the project**

* Develop an AWS Cloud solution to retrieve raw data from deployed camera traps to be processed by a trained TensorFlow machine learning model and stored in an SQL database.
* Develop the required website and mobile phone application to inform the general public about dropbear sightings and assist in dropbear research.

**Project scope**

To meet the user requirements for this project the following software components will be developed.

* Cloud-based API using Amazon Web Services (AWS) to retrieve raw data from email generated by pre-deployed camera traps, to then be processed by a pre-trained TensorFlow machine learning model.
* A secondary Cloud-based API using AWS to retrieve various classification data from the TensorFlow machine learning model, to be stored in an SQL Cloud-based database on the same AWS platform.
* A two-facing website to facilitate the database information for the general public and researchers. On the public level, it will allow the retrieval of dropbear sightings based on a specified postcode. On the researcher level, it will provide an invite-only web portal for researchers to apply for, which will grant access to various information on dropbear sightings.
* A cross-platform smart phone app for Android and Apple iOS with identical functionality as the general public website.
* Email alerts and smart phone notification functionality for postcode sightings.

**Assumptions**

* The project team has the required experience to meet user requirements and deliver the project on time.
* The client will convene with the development team every 3 months.
* The budget allocated provides enough for additional human and computer resources if required.

**Constraints**

* Additional funding is not available for the project.
* Existing software components cannot be modified.
* Team members time on the project is limited to 40 hours per week, Monday to Friday, for the duration of the project.

**Key Milestones**

The milestones are set to be delivered every three months. These meetings will be used to showcase our current advancements in the project and allow Dr Client the ability to take part in the direction of the project. This will be achieved through up-to-date training of Dr Client, with the ability for him to ask questions and discuss relevant changes. Please note: Phase details, as seen in Table 1, can be found in the preliminary execution schedule.

Table 1: Milestones and timeframes

|  |  |  |
| --- | --- | --- |
| **Project Milestone** | **Project Artifact** | **Timeframe** |
| Project start |  | TBD |
| Milestone 1 | Phase 1 delivery | + 3 months |
| Milestone 2 | Phase 2 delivery | + 3 months |
| Milestone 3 | Phase 3 delivery | + 3 months |
| Milestone 4 | Phase 4 delivery, Product completion | + 3 months |

**Identification of Stakeholders**

We understand the following stakeholders as part of the project:

* Dr Client
* University of New England
* State and Federal level project funders
* Drop Bear Protection Society of Australia
* Software Project Manager
* Development Team
* 5 test users