

**Deakin University**

SURROUND-AI

Project Scope

Project Sponsor

Surround Development Team

Project Team

**Squad 2-C1**

Damini Bevoormandya Jayaramu , 218492045

Dipesh Bhatta, 218439043

Harmilap Singh, 218687321

Md Ibn Sikbatullah, 218444302

Sai Krishna Kesineni, 218465396

Salman Khan, 218187674

**Squad 2-C2**

**Unique Poudel**

Document Version 1.1

# Document Revision History

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Date** | **Version** | **Editor** | **Reason** | **Supervisor Signature** | **Client Signature** |
| 02-04-2019 | 1.0 | Dipesh Bhatt | Creation of Project Scope |  |  |
| 06-04-2019 | 1.1 | Unique Poudel | Additional deliverable and project tasks |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

# Motivation / Problem Description

The most prominent task of a Data Scientist is to predict the outcomes based on the enormous data. With everything being automated surround AI is designed to help data scientists to automate the process of making reliable predictions with the libraries of surround AI framework.

The project identifies the promising approaches for the evolution of a machine-learning pipeline within the current solution which focuses on end-to-end solution. The extraction of data within the AI products and machine learning algorithm will help data scientists with the deep understanding of the craft of the problem and plan formulation to engineer the solution.

Major Outcomes of the Project

* Create two examples of machine learning project to implement the surround framework.
* Write a report based on the implementation of surround on those two examples and describe how it helped.
* Build documents on getting started, examples of using surround and tutorials to use the surround AI framework.
* Help documents, content-creation on Surround, website design, UX/UI requirements (if any)
* Reporting of the whole project based on the implementation of surround with its use cases, unique value proposition discussion and its advantages.

# Context

The development of Data Science with hundreds of algorithms and frameworks have made the life of data science easier than in the past. However, framework has not been properly defined for a specific problem with the deep integration of machine learning algorithm and deployment of AI products on the framework. This project aims to develop a suite of machine learning framework and libraries with the help of research engineers to deploy the AI products unto the framework for automated prediction and efficient knowledge extraction from the Data Sets.

The project has been in the rapid development phase with four major deliverables to be accomplished in upcoming sprints with 2 squads. This document reports the status and sprint goals for the squad2 team.

The deliverables have been outlined as follows:

Deliverable 1: Build examples of using Surround on a machine learning project. Write a blog post describing the problem and how Surround helped.

Deliverable 2: Build adapters to integrate Surround with machine learning tools and frameworks i.e. Tensorflow and SageMaker.

Deliverable 3: Develop a static website with guides for getting started and simple examples using Surround.

Deliverable 4: Improve robustness by developing a suite of unit tests for the core Surround functionality.

# Value Proposition

Below mentioned are the few benefits of adopting this solution:

* Commercial: Visual search, visually similar recommendation, chatbots, improve customer satisfaction, inventory and delivery management, competitive advantage, etc.
* Social: Mapping of consumer behavior, chatbots, virtual assistants, etc.
* Technological: Early diagnostics in health care, detect fraud, cut transactional and infrastructural costs, etc.
* Operational: Increase business sales, improve customer experience, automate work processes, provide predictive analysis, inventory and delivery management, competitive advantage, etc.

# Core Idea/User Stories/Requirements

The core idea of the project to develop and enhance the features of surround and undergo four major deliverables. For the efficient operations and effective work productiveness, two squad teams have been divided with four segments of work.

1. Create two examples of machine learning project to implement and test the surround AI functionality.

Ownership (Squad2-C1)

# Target Deliverables

The following goals have been identified as dependencies that need to be addressed early in the life cycle of the project.

1. A something something that:
   1. Does this
   2. And this too
   3. And that
   4. And this
2. A thingy encapsulating:
   1. Stuff
   2. Hopes
   3. Dreams

*Notes:*

* *If any.*

# Roadmap

The roadmap to the execution and delivery of this project is detailed subsequently.

## Execution Strategy

* Explore the input data provided and confirm if acceptable for the focus of Proof of Concept
* Incrementally,
  + Build and deliver a docker container with blah blah functionality (to permit the client team to explore integration & validate it fits within the target deployment environment)
  + Refine the docker container and provide updates to (client name) with incremental features
* Prepare research report
* Provide knowledge transfer

## Sprint 1

**Goals** (these are examples)

The goal of Sprint 1 is to deliver scope document and work with (client name) to agree on the acceptance criteria and priority for the deliverables. These can be decomposed to:

* Project success criteria
* Problem domain clarification
* Visual depiction of the workflow in a flow chart of the processes that this project will automate

**Target deliverables**

* Workflow flowchart that has been agreed upon by all parties
* Scope document (this document) that has been agreed upon by all parties
* Communication and delivery expectations that has been agreed upon by all parties

## Sprint 2

**Goals** (these are examples)

The goal of Sprint 1 is to deliver the end to end infrastructure so we can start collaboratively planning the interfaces to enable integration efforts to commence on (client name)’s side. These can be decomposed to:

* Get an end to end solution working
* Collaboratively create an output data format / schema (in collaboration with client)
* Prepare a suitable environment within a docker container to encapsulate and execute the transformation process

**Target deliverables**

* A docker container encapsulating the transformation engine
* An invocation script that accepts the input folder, output folder and invocation parameters
* A deployment document that describes how to install and use the solution

## Sprint 3

**Goals** (can be amended based on how Sprint 2 goes)

The goal of Sprint 3 is to build upon the Increment in Sprint 2, namely by adding:

* Error logging
* Input/Output Validation
* Transformation logic

**Target deliverables** (can be amended based on how Sprint 2 goes)

* A docker container encapsulating the transformation engine
* An invocation script that accepts the input folder, output folder and invocation parameters
* A deployment document that describes how to install and use the solution
* List of errors and associated meaning
* Sample dataset to validate the transformation engine reported results

## Sprint 4

**Goals** (can be amended based on how Sprint 3 goes)

The goal of Sprint 3 is to…

* bang
* pow
* smash

**Final deliverables** (can be amended based on how Sprint 3 goes)

* thing 1
* thing 2
* thing 3
* thing n

# Limitations, Constraints and Considerations

The limitations, constraints and considerations of the project are as follows:

The following constraints apply for the PoC and need to be considered when integrating the outputs produced in a larger workflow/pipeline,

* The blah needs to work on AWS as that is technology stack used by (client).
* The transformation engine needs to be in Python as that is technology stack used by (client).
* This project will not focus on UI/UX refinements, instead focusing on implementation of the functionality
* The front end will conform to Web Content Accessibility Guidelines of at least AA.