

Polyp Predictor – Final Submission

Term: Spring 2021

Team Name: Colon Cancer Detectors

Project #25 – Early Colon Cancer Detection in Men

Section I: Team Details

Team Members: Joseph Waugh

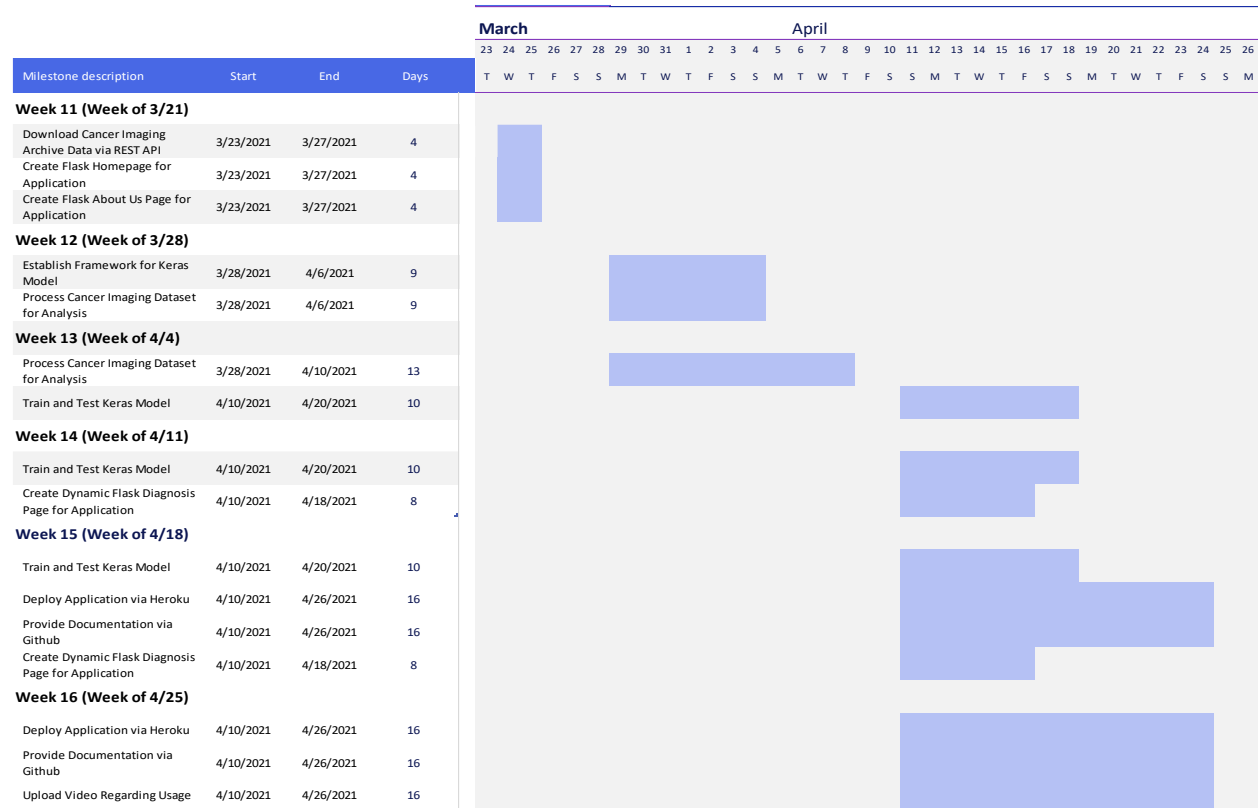
TA Mentor: Tia Pope

Industry Advisor: Tia Pope

Quick Description of Application: Polyp Predictor is a web-based tool via a Python Flask framework where a user uploads a colonoscopy photo, and a response is given for the percent likelihood the individual has cancer via a dynamically updating webpage using a trained TensorFlow neural network model.

Team Member Roles & Responsibilities: Joseph Waugh – This was an individual project, so I assumed all responsibilities.

Final Gantt Chart:



Section II – Application

Github Repository: All of your code must be in this repository.

Final Git Commit: [Second Commit](#)

Github Link: [Github Link](#)

Branch: [Master Branch](#)

Application Details

App Name: Polyp Predictor

App URL: [Application URL](#)

App Description: Polyp Predictor is a web-based tool via a Python Flask framework where a user uploads a colonoscopy photo, and a response is given for the percent likelihood the individual has cancer via a dynamically updating webpage using a trained TensorFlow neural network model. The neural network was trained using the [Kvasir dataset](#), which contains 1000 colonoscopy and endoscopic images from the Vestre Viken Health Trust (VV) in Norway, where these images were taken as an initiative aimed at providing new data for cancer research worldwide. The trained neural network works via a GET/POST method where the user's inputted image will be fed into the model, and then a response will be returned via a Softmax function which creates a probability based on the associated classes in the model, which would be either cancerous or "normal-cecum" (i.e., health).

Section III – Project Presentation

Presentation Requirements: No greater than 10 mins

- Project Goals & Requirements
- Team Roles & Contributions
- Research based on Industry Problem
- Research based on Gaps in Domain
- Research – End User Interviews (or something similar)
- Demonstration of Application which includes running the application and reviewing it's key features.
- Project Status & Gantt Chart
- Discussion of Future Plans and Opportunities

Link to Presentation Video: [link](#)

Note: Convert Slides to PDF and Merge with this single submission. You could add the contents of this deliverable to the final slide deck and convert the whole thing to a PDF to submit. Just make sure all links are clickable and do not include the submission information in the video presentation.

Section IV – Project Documentation

Create a directory in your repo called “Final Delivery.” Within this directory provide the following:

- Final Gantt Chart
- Application Manual
- Special Instructions – containing instructions [“navigate to this URL...type in the following...click on this...etc.”] for the instructing team to follow in order to successfully deploy and run your application (in the event it is necessary, trust us it happens every semester). Definitely include any special build or launch instructions.
- Research Directory – containing research material.
- Documentation Directory – containing Use Case Model, Design Doc, Project Plan, Test Plan
- All start up files (ie. docker-compose.yml, .drone.yml, and so on...)

Provide direct links to the following

Final Gantt Chart: [link](#)

Application Manual: [link](#)

Special Instructions: no special instructions required

Research Directory: [link](#)

Documentation Directory: see Use Case Model, Design Document, Project Plan

Project Plan: [link](#)

Use Case Model: [link](#)

Design Document: [PDF – Documentation Link](#); [Jupyter Notebook Documentation Link](#)

Test Plan: no test plan required

All of the documentation that you submit with your final project should be treated as an official document – this includes the manual. Therefore, any manual that is not carefully structured or clearly written will result in significant point loss. Additionally, your Team Name, Team Members, Project Name and GitHub link should be included in this file. It shall be called “Manual – <Team Name>.pdf.” Similar names for the other documents.