

<b>BUSINESS CASE</b>	
<b>Proposed Project</b>	Crab
<b>Date Produced</b>	September 28, 2022
<b>Background</b>	In today's world, there are so many people suffering from skin cancer. In most of the cases, people come to know that they are suffering from melanoma at the last stage. Detecting cancer at the earliest stage gives the best chance to cure this disease. Our AI application will help in detecting cancer at the earliest stage and with this in mind, a person who is detected with cancer can visit a doctor to know what type of cancer screening may be appropriate for them.
<b>Business Need/ Opportunity</b>	Our aim to develop this application is to diagnose melanoma as early as possible, saving people's life and money. Our application will help in detecting skin cancer at the early stage, increasing the chances to cure the disease. Also, it fulfills one of the 17 goals of the UN: good health and well-being. According to our research, the international average diagnosis price of melanoma is \$150 USD per month, and the total cost of a patient could reach \$3800 - \$8000. The cost to cure melanoma depends on the type of stage, higher the stage, higher the amount. There are few applications that provide such services, however, according to Memorial Sloan Kettering Cancer Center (MSK) dermatologists Allan Halpern and Veronica Rotemberg reported that the overall accuracy of the apps that were evaluated was only 59%. Today is the era that the application of convolution algorithms on image recognition has become mature, and therefore we choose convolution as our primary algorithm and this should provide us with a much higher accuracy rate. People will be able to click pictures of any mark on their body and upload it to an AI application, and this application will detect whether the person is suffering from skin cancer or not.
<b>Options</b>	<ul style="list-style-type: none"> <li>- Do the project</li> <li>- Do nothing</li> <li>- Pick another project</li> </ul>
<b>Cost-Benefit Analysis</b>	
[This section contains the detailed costs and benefits of each option listed in the previous section. The costs may include considerations such as financial expenditures, the amount of time required, possible risks, and the potential for reduced quality. The benefits may include the potential of increased sales, market share, and brand recognition, and the reduction of errors and ongoing costs. Each option should be clearly identified and listed separately.]	

#### Do the project

- Benefit
  - one of our members has a concurrent class focussing on AI to which their work in that class is immediately beneficial to the group
  - we are working in a competitive space where not only can we gage the needs of users a little easier by looking at competing products to see what can be improved, even in the event of failure of the project there is still a chance that our research and development can still help the realm of cancer research
- Cost
  - there may be a monetary cost of buying an external IaaS server to run our back end code/api
  - not every member is versed in the difficult facets of the project (AI)
  - It may be really hard to find users to test this with

#### Do Nothing

- Benefit
  - more time to work on other classes
- Cost
  - failure of the capstone
  - loss of tuition money

#### Pick another Project

- Benefit
  - another project opens up possibilities to projects where everyone know how to do each others jobs
  - possible better user testing opportunities
- Cost
  - possibly not enough time to switch gears to another project

### Recommendation

[This section contains the recommended option from the previous section.]

We would recommend to do this project because similar applications on the market are having low accuracy rate and this is a life critical issue. We are willing to make this project an open-source and free software such that people use our service at no cost.