1. What is the goal of your research?

To correctly determine existence of cancer and cancer type in individuals from a cheap and easy blood test using circulating dna.

1. Why should we care about your work? What makes it exciting?

There aren’t many tests out there that can classify multiple types of cancer. A blood test would also be much easier and less expensive than other types of testing. Our project attempts to improve the accuracy of the test from the accuracy of the original researchers.

1. Is your project primarily focused on developing a method, or on using an existing method to approach a new problem?

It is using an existing method to approach a new problem. The general method is deep learning with neural nets, but our project focuses on an application rather than developing a new method.

1. What information did you need to learn in order to begin your project?

We learned Python and how neural networks work and how to use Keras to build them. We also needed to learn some cancer terms like somatic mutations in order to understand our data and the paper we are using.

1. What previous work did you build your research from?

Based on the article

Detection and localization of surgically resectable cancers with a multi-analyte blood test. They used logistic regression for cancer classification; we used their data.

1. Imagine you are explaining your project to a new thesis student. Describe the process of your project in 3-5 steps.
2. Make a neural network to classify cancer or not.
3. Optimize it
4. Make another neural network to determine the location.
5. Optimize it
6. How will you know that your project is complete?

When our results are no longer improving for steps 2 and 4.

1. Which step from question 6 are you currently working on? How long do you think it will take to complete all of the steps?

We’re done with step 2. We could actually stop now and just not do step 3 and 4 or we could continue. It will probably take three months to do those two steps otherwise. There’s a big gap from here and the next step. It’s very likely we would need a completely different approach to complete the second part.