

PROJECT PROPOSAL

What is the title of your project?	STRIP AI Blood clot
Background (Write about 200-300 words about what your project focuses on)	<p>On July 26 2022, Mayo Clinic, a leading academic center for clinical practice, asked for the help of computer scientists to design a model capable of detecting the origin of blood clots. When I first heard about this, I was deeply interested in the topic, as I have family members who had suffered from blood clots in the past. Taking a personal interest in this project is a leading contributor for my interest, in addition to the inherent virtuous nature of helping the world of medicine with AI.</p> <p>To first start my project, I had to discover what kind of blood clots I would have to differentiate and additional information about the data provided by Mayo Clinic. To summarize, strokes are the second leading cause of death worldwide, and 23% of patients receive a second stroke, often deadly. By detecting the cause of the clot and the stroke etiology, doctors can mitigate the chances of second strokes, saving countless lives. The two main stroke etiology subtypes are cardioembolic and large artery atherosclerosis, which are going to be referred to as CE and LAA respectively. By optimizing keras models and using intensive data preparation tools such as tiling or seam carving, this project should have encouraging results despite some major challenges, such as the absurdly large size of the dataset or the amount of blank space in each image.</p> <p>The overall goal of this project is to create a model capable of classifying the origin of blood clots from .tif image files. By doing so, this project will be another step in the two-hundred years old journey of medicine.</p>

What is the subject area you're covering? (E.g. AI and Healthcare, Data Science and...)	AI and healthcare
What is the dataset you're using? Please either add the link or name what the dataset is called.	https://www.kaggle.com/competitions/mayo-clinic-strip-ai/data (download at your own risk, 400 gb of data)
If you're doing a research paper, what is the research question you're aiming to answer?	Can we classify the etiology of blood clots as Cardioembolic or Large Artery Atherosclerosis?
What is the final project form that you and your mentor have chosen? <ul style="list-style-type: none">- Presentation- Research Paper- Short Write up- Other (Please explain)	Research paper