Semester Project Proposal

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1 Virus Identification

1.1 Description

For my semester project, I will be working on applying Googles Inception deep learning model (this could be subject to change) to be able to recognize different classes of viruses in the blood/tissue/fluids of humans, and potentially other animals too. My purpose for this will be to expedite the process for identifying what virus is present in some sample, so that doctors may quickly figure out what a patient is infected with and provide a treatment faster. This will lead to patients recovering from their illnesses faster, thereby hopefully preventing their illnesses from getting worse.

1.2 Applications

This result of this project can be used in patient diagnostic labs, where workers examine patient blood/tissue/urine/other fluids to test for certain viruses or bacterial infections. My project would take the place of these workers, providing a faster, more efficient, and accurate analysis of a patients diagnostic work. Something cool that could be a future application of this would be to create some kind of device for the patient, much like a glucose meter, and have this take the patients blood/urine and provide instant test feedback.

1.3 Motivators

Recently, Ive been coming down with illnesses that health practitioners have not been able to identify. Moreover, the diagnostic tests for my blood and urine work would take almost a week to come back to me, and for me and many others, that is too long to wait. Treatment should be made available in a shorter window of time, and doing virus classification would help with this. It would take away time-consuming aspects of the testing process away, such as transportation of the patients samples. It would also help with identifying what exactly I had, as the illness I had a month ago is still unknown to my doctor and my Marist nurse practitioner.