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## Sensing Pressure with Light

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## Sensing Pressure with Light

My research involves developing a device to predict applied pressure on tissue using optical signals. The device is pressed against the tissue, emits light, and then measures the amount of reflected light from the tissue. The reflected light quantity is then used by the machine learning model to predict the applied pressure on the tissue.

With the goal of developing a tool to assist neurosurgeons to gently handle brain tissue, this device uses light to sense the health and viability of tissue, alerting surgeons if tissue is being harmed by measuring the pressure applied to brain tissue. Limiting harm during procedures will reduce recovery times and improve patient outcomes.

Recent advances in manufacturing processes have resulted in ultra miniature, cost-effective, low powered optical devices that can be found in smart watches and phones. I am utilizing these commercially available optical devices to keep the cost low.