ZILIC

Detect Any Disease with a Single Scan

Problems We're Addressing

Over 10% of patient deaths worldwide are caused by misdiagnosis. In hectic ERs, doctors don't have the time to look at each patient carefully and are likely to miss something. On top of that, existing machine learning models to detect diseases are too narrow. They can only find the disease they're trained to look for, not rare or new ones.

Our Solution

At Zilic, we're building a machine learning model using Generative Adversarial Networks (GANs) and Autoencoders to spot any anomalies present in a medical image. This includes anything from detecting pneumonia in a lung X-ray to finding cancerous tumours in a PET scan of the brain. We can even detect diseases the model (or doctor) hasn't seen before, saving doctors time and patients' lives.

Machine Learning

Machine learning is a huge key to solving really important problems in the healthcare industry. We're taking out the risk factor of human error to diagnose faster and more accurately so treatment can start ASAP.

How Zilic Can Detect Any Disease

Anomaly Detection

Using GANs and encoders, our model can view any medical image and highlight regions that contain diseases or other anomalies.

GANs

We train a GAN on healthy images of organs so it can reconstruct them. Once it learns what's healthy, it can also spot unhealthy organs.

Autoencoders

The encoder turns healthy images into latent space (compact number representation) so the GAN can be trained to recreate them.

Loss Metrics

We use reconstruction loss, encoder representation,and discriminator output. If the combined loss exceeds a threshold, the image is marked and the disease is highlighted.

Key Advantages

Existing machine learning models for disease detection can only find what they're looking for. A breast cancer model can't find pneumonia or any other rare/unknown diseases.

Saving Doctors Time

We can scan a medical image of an organ and detect all anomalies present with over 60% accuracy as of May 2019. We're saving time and saving lives.

Our Vision

We see Zilic as a means of not only preventing human error and saving doctors time but a step towards pioneering proactive healthcare. A system where people can easily get their organ scans analyzed before disease gets deadly.

Proactive, not reactive. This is how healthcare should really be. A system of certainty.

- Liam Hinzman, Co-Founder

It's like we're putting full-blown labs on laptops.

- Aadil Ali, Co-Founder