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FYP 2023 Conference Abstract

**Title:** Automated Electronics Repair of Modern Communication Devices using Thermal Imaging and Machine Learning

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**Conference:** Final Year Project 2023 Part A

**Abstract:**

The use of modern Communication devices is integral to our lives. We have more technological devices in our time than the number of humans on earth. These devices are bound to get into a lot of accidental malfunctions. Electronics Repair is a very complex, time consuming and money consuming process. The process also requires special knowledge and experience to execute.

In this project we will deal with the process of electronics repair and come to a modern innovative solution that involves automation. This project’s primary goal is to come up with a system that can identify hardware faults, analyse, and rectify.

The primary approach includes isolating a thought pattern of identifying damaged and unresponsive parts that will highlight the underlying problems with the device. There must be a prototype that can utilise the machine learning to produce a series of menial tasks that will save time in the long run.

The program would suggest different solutions to all kinds of problems, starting from repair to the mother board to recycling and selling of parts. The program and device can search the internet with possible solution to repairs and damage.

The required diagnostics will involve all with the help of repair knowledge integrated with machine learning which can solve most repair problems. For repairs on complicated circuits like motherboard and PCBs it will require thermal imaging to seek damages precisely.