Integration of a Mobile Application using Medical Infrared Imaging to improve the Effectiveness of Physiotherapy Treatments

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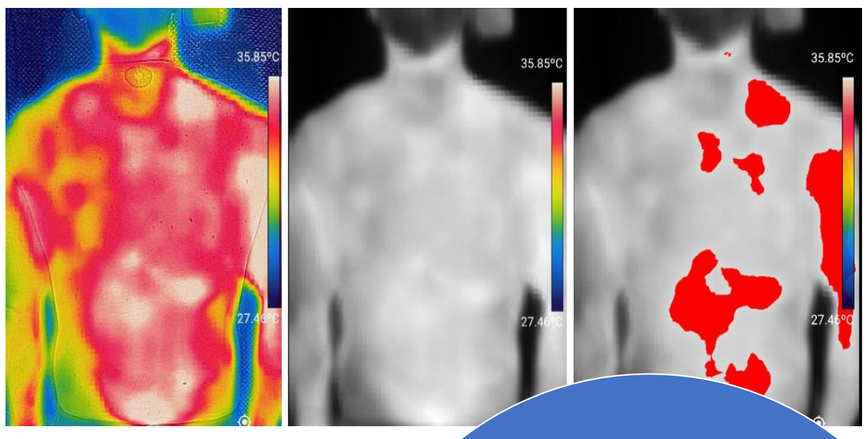
Problem:

Current **musculoskeletal related treatment options** rely on the description of the patient, as well as on the experience of the individual practitioner, making the diagnosis more difficult and time consuming!

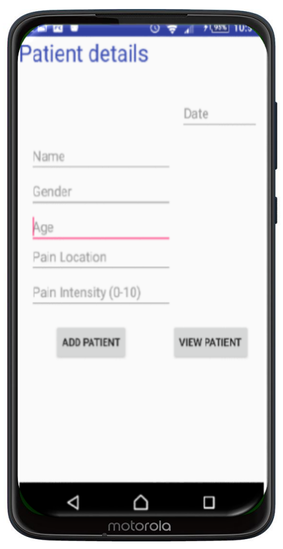
Solution:

Development of a **mobile application in combination with thermal imaging and machine learning image processing techniques** enables the practitioner to quickly assess the patient and record specific data electronically, **making the treatment process more effective.**



- **Non-radiating and non-invasive method**
- **Promising solution to locate inflammation within the human body**
- **Is reliable and accurate.**
- **Can save you money compared to other techniques**

Medical Thermography



Mobile Application

- **Easily accessible**
- **Low cost**
- **Easy to use**
- **Offer platforms for rapid development and implementation**

Artificial Intelligence (AI)

[1]

- **Automatically learn and improve performance from experience.**
- **Useful for applications such as image recognition, text translation and voice recognition.**
- **Has been successfully applied to Breast Cancer Detection and other healthcare applications**

Project objectives:

1. **Design of a functional thermal imaging mobile application** for patient rehabilitation and therapy assessment.
2. **Processing pre and post treatment thermal images** to assess the effectiveness of the therapy.
3. **Implementation of deep learning algorithms** to simplify the process of identifying areas of interest to automatically predict the optimal therapy for the best rehabilitation outcome.

Impact:

Patients

- **Improved efficacy of treatment**
- **Reduced recovery time**
- **Visual proof of condition**
- **A future app version can offer an accessible exercise plan**

Clinical Staff

- **Cost effective solution to collect data electronically**
- **Images can show a direct comparison of the treatment progress**
- **Offers a direct link to patient data system**
- **Access to colleague's opinion for reference**

Environ-ment

- **Changing from paper to digital patient data recording**

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