Improving the Resolution and the Readability of Two Dimensional Medical Images through Mathematical Transformations

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The project "Improving the Resolution and Readability of Two Dimensional Medical Images through Mathematical Transformations" is classified in the scientific field of "Informatics" and focused in the field of bio-informatics and image processing.

The main purpose is increasing the resolution and improving the readability of medical images. The project is multifunctional and can be used in non-medical fields. The basic idea is devoted to the important but still unresolved problem with X-ray and tomographic images, how to increase their resolution and obtain higher readability (better overall image image) without exposing the patient to higher radiation. Standard approach simply increases the radiation level to achieve this. The aim is to reduce the chance of medical error caused by insufficient and inaccurate information and to increase the chance of successful treatment of the disease while using as little radiation as possible. In this way, the project can help save human lives.

The author's contributions during the development of the project were the creation and implementation of algorithms for raising and lowering the resolution as well as an algorithm for improving the readability. It was also discovered that it is not effective to apply the same level of blur to images with different resolution.