



Doctoral Thesis Title: Craniofacial pathologies in infants using mobile technology and artificial intelligence

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Abstract:

Craniofacial pathologies in infants are congenital disorders that can affect the normal development of the patient. Some of these defects may be minor and need no treatment, while others may be severe, requiring surgery and long-term treatment. Craniofacial morphological deformations can be represented in three-dimensional (3D) models. This can be used to create a comprehensive representation of the affected infant.

Current diagnostic methods for craniofacial pathologies in infants include clinical evaluation, the use of medical imaging such as axial computer tomography (CT) and magnetic resonance imaging (MRI), and genetic testing. However, these methods can be expensive, invasive, and require a visit to a specialist. In recent years, there has been a growing interest in the use of mobile technology as well as the application of artificial intelligence for application in various technological areas associated with health. The use of the camera of a mobile device to take data on the infant's head, combined with photogrammetry and artificial intelligence algorithms, could allow a more accurate and accessible early detection of craniofacial pathologies, providing advantages such as greater precision, efficiency, personalization and error reduction.

This proposal proposes to eventually improve the accuracy in the diagnosis and monitoring of craniofacial deformations in infants using mobile technology and artificial intelligence.

Available Means:

The means and equipment available in the GIFLE-UPV group and the Department of Cartography, Geodetic and Photogrammetric Engineering will be available, as well as equipment from external collaborators to the project and members of its work team.

Bibliography:

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