3-D Imaging to Improve Forensic Facial Reconstructions

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Technology description

Invention Summary
Forensic investigators have a new tool to help identify human remains. This innovative algorithmic application compares skull measurements across a growing database of orthodontic records to reconstruct unknown faces.
Using Lateral Cephalometric Analysis, a set of measurements taken from common orthodontic X-rays, a 3-D pattern emerges that is as unique to each person as a fingerprint. When cross-referenced with a database of other lateral cephalograms, near-matches in bone structure help identify pools of people with similar facial features, from which the process can approximate facial appearances.
This invention could eliminate the need for cost-prohibitive clay modeling in forensic reconstructions, and could help put a face on unidentified human remains that are hundreds or even thousands of years old.
Market Opportunity
The ability to measure skulls in a way that provides reliable facial approximations is highly desirable and extremely valuable for law enforcement, national governments, international relief agencies, biological researchers, anthropologists, medical professionals and others. Investigative agencies worldwide would benefit from use of this technology. As the database grows, the available measurements fill a void in medical and forensic data related to research on bone structures of children and adolescents.

Advantages

• Useful tool for human identification purposes
• Can determine gender rapidly
• Replaces expensive clay modeling in forensics, providing results more quickly and at a fraction of the cost
• Technology to improve as orthodontic database grows and algorithm is refined

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