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Real-time Automated Metrics for Virtual Bone Drilling

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Real-time Automated Metrics for Virtual Bone Drilling Inspiring Minds Submission

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Advanced computer simulation allows medical trainees and pre-operative planners to practice and plan surgical procedure in a virtual environment. Particularly, simulated bone-drilling applications allow users to input patient medical scans (such as a CT scan) that automatically convert to a 3D virtual scene. The purpose of my research was to design and implement an automated system capable of analyzing and recording simulated bone-drilling as it occurs in the virtual environment. Additionally, after the simulated procedure, the user may replay their performance, view statistics, and re-attempt chosen portions of the virtual surgery. Thus, reducing the barrier to train and evaluate surgical bone drilling procedures, such as mastoidectomy.