Precision Freehand Sculpting of Bone

Gabriel Brisson, *Takeo Kanade*, *Anthony M. Di Gioia*, and *Branislav Jaramaz*
Proceedings of the 7th International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI 2004), September, 2004, pp. 105 - 112.

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Abstract

The Precision Freehand Sculptor (PFS) is a compact, handheld, intelligent tool to assist the surgeon in accurately cutting bone. A retractable rotary blade on the PFS allows a computer to control what bone is removed. Accuracy is ensured even though the surgeon uses the tool freehand. The computer extends or retracts the blade based on data from an optical tracking camera. Three users used each of three PFS prototype concepts to cut a faceted shape in wax. The results of this experiment were analyzed to identify the largest sources of error.

Notes

- **Associated Center(s) / Consortia:** Medical Robotics Technology Center
- **Associated Lab(s) / Group(s):** Medical Robotics and Computer Assisted Surgery
- **Associated Project(s):** Precision Freehand Sculpting
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