

Publication

Augmented Reality Assisted Brain Tumor Extraction in Mice

ConferencePaper (Artikel, die in Tagungsbänden erschienen sind)**ID** 3293841**Author(s)** Schneider, Adrian; Thalmann, Peter; Pezold, Simon; Hieber, Simone E.; Cattin, Philippe C.**Author(s) at UniBasel** [Cattin, Philippe Claude](#) ;**Year** 2015**Title** Augmented Reality Assisted Brain Tumor Extraction in Mice**Editor(s)** De Paolis, Lucio Tommaso; Mongelli, Antonio**Book title (Conference Proceedings)** Augmented and Virtual Reality**Volume** 9254**Place of Conference** Second International Conference, AVR 2015, Lecce, Italy**Publisher** Springer**Place of Publication** Cham**Pages** 255-264**ISSN/ISBN** 978-3-319-22887-7 ; 978-3-319-22888-4

Computer assisted navigation is a widely adopted technique in neurosurgery and orthopedics. In general, the used tracking systems are applicable to multiple situations. However, these general-purpose devices are costly and in case of unusual laboratory applications, a dedicated solution often shows a better performance. In this paper, we propose a cost-effective 3D navigation system for the augmented reality assisted brain tumor extraction in mice, used for cancer research. Off-the-shelf camera 3D reconstruction algorithms are used to individually track a target and a surgical tool. Relative to its costs, the experiments showed an excellent navigation error of 0.48mm +/- 0.25 mm.

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