Making neurosurgery safer: 
a computer-based approach

Precision and accuracy play a central role in neurosurgery. Common procedures include targeting of tumors, lesions, and anatomical structures with a probe, needle, catheter, or electrode inside the brain. Instrument misplacement may result in ineffective treatment and/or severe neurological complications.

We have developed a set of computer-based tools to optimize the planning, execution, and evaluation of keyhole neurosurgery. In this talk, we will describe algorithms and experimental results for optimal insertion trajectory planning, accurate registration, tracking, and image-guided navigation and robotic targeting during surgery, and post-operative evaluation.

* Joint work with:
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