



OPAL

Dynamic Modeling of the Oral, Pharyngeal and Laryngeal Complex for Biomedical Applications

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Airway Segmentation using Crawlers and Optimal Paths

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I will describe our deformable organisms artificial life approach to medical analysis, which complements low-level, bottom-up deformable models with high-level, cognition-inspired deformation control mechanisms for image segmentation. I will then talk about Image Crawlers, a specific subclass of deformable organisms designed for segmenting tubular and branching structures from medical images. Given the crawler's predominantly localized decision making, I introduce how we use complementary globally optimal minimal paths and tubes for segmentation. Sample results on segmenting various medical images will be presented.