

# International Journal of Biomedical Imaging

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## Probabilistic Model-Based Cell Tracking

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### Abstract

The study of cell behavior is of crucial importance in drug and disease research. The fields of bioinformatics and biotechnology rely on the collection, processing, and analysis of huge numbers of biocellular images, including cell features such as cell size, shape, and motility. However manual methods of inferring these values are so onerous that automated methods of cell tracking and segmentation are in high demand. In this paper, a novel model-based cell tracker is designed to locate and track individual cells. The proposed cell tracker has been successfully applied to track hematopoietic stem cells (HSCs) based on identified cell locations and probabilistic data association.

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