UNIVERSITY OF SOUTH FLORIDA

Major Research Area Paper Presentation

Automating Cell Count in Microscopic Images of Stained Tissues Using Deep Learning and Unbiased Stereology

by

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For the Ph.D. degree in Computer Science & Engineering

In recent decades, stereology-based studies have played a significant role in understanding brain aging and developing novel drug discovery strategies for treatment of neurological disease and mental illness. A significant obstacle to further progress in a wide range of neuroscience sub-disciplines remains the lack of high-throughput technology for stereology analyses. Though founded on methodologically unbiased principles, commercially available stereology systems still rely on well-trained humans to manually count hundreds of cells within each region of interest (ROI). These studies are prone to errors and poor reproducibility due to human factors such as subjectivity, variable training, recognition bias, and fatigue. An automatic stereology method would alleviate a significant burden on pathologist and medical experts. We proposed a fast deep learning method for automating cell count in unbiased stereology. Moreover, we proposed iterative deep learning with a human-in-the-loop approach to improve unbiased stereology cell count performance.

Wednesday, March 6, 2019
3:00PM
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THE PUBLIC IS INVITED

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