UNIVERSITY OF SOUTH FLORIDA

Major Research Area Paper Presentation

Classification of Global Microglia Proliferation Based on Deep Learning with Local Images
by
Hunter Morera

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

Microglial cell proliferation in neural tissue occurs during infections, neurological disease, neurotoxicity, and other conditions. In basic science and clinical studies, quantification of microglial proliferation requires extensive manual counting (cell clicking) by trained experts (2 hours per case). Previous efforts to automate this process have focused on stereology-based estimation of global cell number using deep learning-based segmentation of immunostained microglial cells at high magnification. To further improve on throughput efficiency, we propose a novel ensemble of convolutional neural networks with training by local images, i.e., low (20x) magnification, to predict high or low microglial proliferation at the global level.

Friday, December 3rd, 2021
1:00 PM
ENB 118 & Online: tinyurl.com/MajAreaPres
Please email hmorera@usf.edu for more information

THE PUBLIC IS INVITED

Examining Committee
Dmitry Goldgof, Ph.D., Major Professor
Lawrence Hall, Ph.D.
Sudeep Sarkar, Ph.D.
Peter Mouton, Ph.D.
Ashwin Parthasarathy, Ph.D.

Xinming Ou, Ph.D.
Associate Chair for Graduate Affairs
Computer Science and Engineering
College of Engineering

Sudeep Sarkar, Ph.D.
Department Chair
Computer Science and Engineering
College of Engineering

Disability Accommodations:
If you require a reasonable accommodation to participate, please contact the
Office of Diversity & Equal Opportunity at 813-974-4373 at least five (5) working days prior to the event.