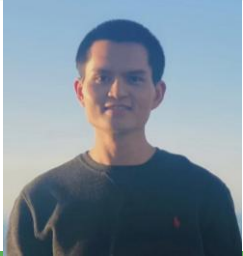


Séminaire

Département des sciences de
l'imagerie médicale et des
radiations

LIFESPAN MAPPING HUMAN CEREBRO- VASCULAR AGING: TOWARDS NORMATIVE CHARTS AND CEREBRO- VASCULAR AGE PREDICTION MODEL



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Cerebrovascular diseases, including stroke and vascular dementia, remain leading causes of mortality and long-term disability in Canada. Cerebrovascular aging is one of the primary risk factors for these conditions, yet its normal trajectory remains poorly understood, limiting our ability to detect atypical aging and to determine how early pathological changes emerge.

My PhD project has two main objectives: (1) to characterize normal cerebrovascular aging and identify key aging milestones by developing normative charts of cerebrovascular morphometrics using non-linear statistical models applied to a large lifespan Computed Tomography Angiography (CTA) dataset of healthy individuals; and (2) to develop a Cerebrovascular Age (CvAge) prediction model using deep learning models trained on CTAs from healthy cohorts, which summarizes cerebrovascular imaging patterns into a unified indicator of deviation from normal aging.

Together, these complementary frameworks will advance our understanding of cerebrovascular aging and enable the detection of atypical aging, supporting precision approaches to brain health.



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