Title: Enhanced Adaptive Stochastic Gradient Descent: Convergence Analysis and Its Application in Single-Cell Perturbation Analysis

Francis Boabang, Ph.D.

Concordia University

1455 De Maisonneuve Blvd. W.  
Montreal, QC  H3G 1M8  
CANADA

[f\_boaba@encs.concordia.ca](mailto:f_boaba@encs.concordia.ca), [boabangf@yahoo.com](mailto:boabangf@yahoo.com)

Samuel Asante Gyamerah, Ph.D.

Department of Mathematics, Toronto Metropolitan University, Toronto, Ontario, Canada. (Corresponding author: asante.gyamerah@torontomu.ca)