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| **Algorithm 1:** Here is the Gravity, our proposed optimization method with a kinematic approach. is the normal distribution with a mean of and a standard deviation of . Also, is the gradient of the objective function*, J, w.r.t W.* The symbol is the element-wise division (Hadamard division). This algorithm has three hyper-parameters whose recommended values are , , . For easier implementation of the Gravity optimizer, its python implementation using TensorFlow’s high-level API, Keras, is available in the Gravity GitHub repository. |
| **Require:** : Learning Rate |
| **Require:** : Govern initial Step size |
| **Require:** : Moving Average Parameter |
| **Require:** : maximum number of update steps |
| for each weight matrix : |
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| **while** **:** |
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|  |
| for each weight matrix **:** |
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